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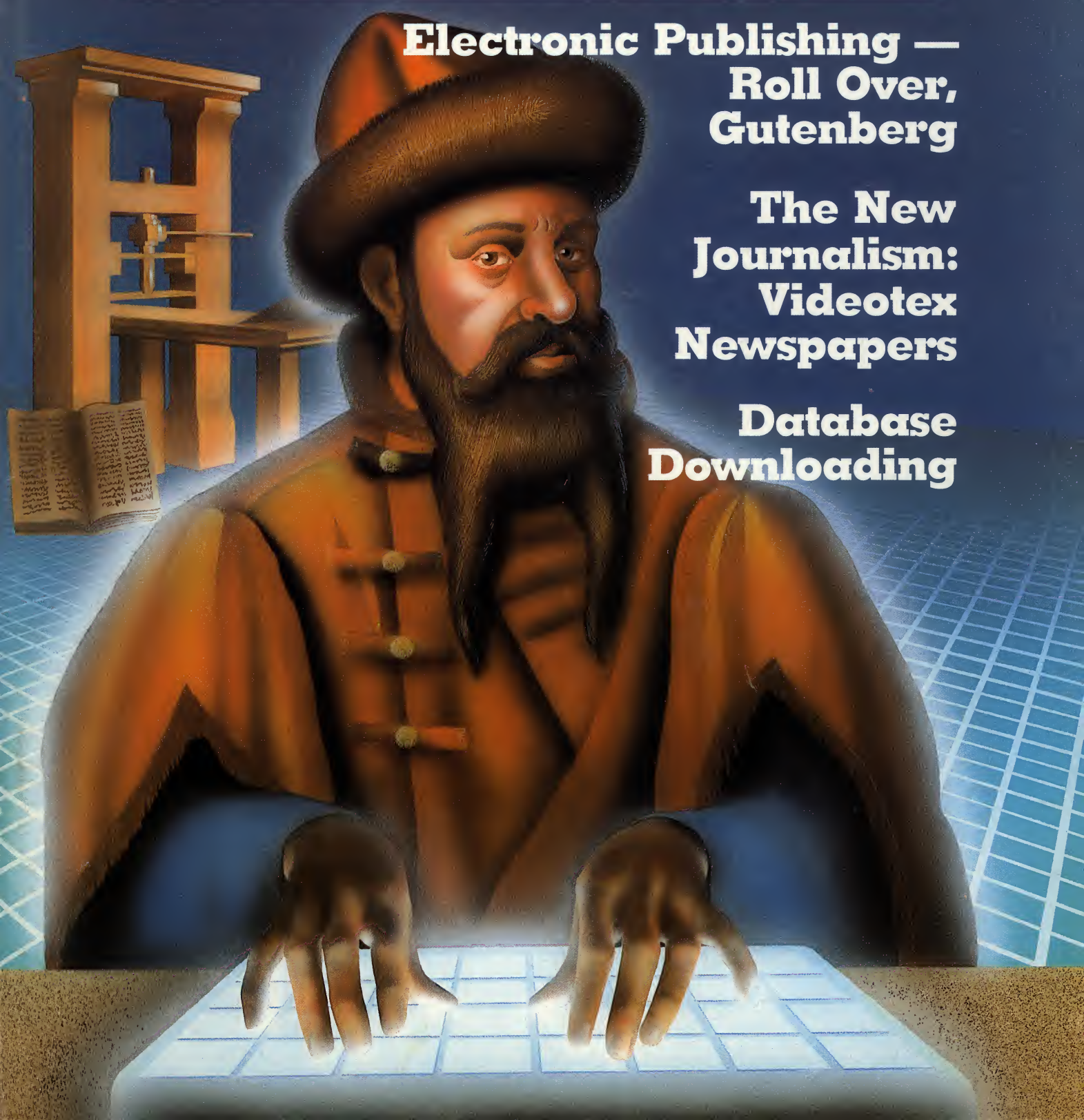
TODAY

THE VIDEOTEX/COMPUTER MAGAZINE



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The new STX-80 printer for only $199.*

TODAY
THE VIDEOTEX\COMPUTER MAGAZINE

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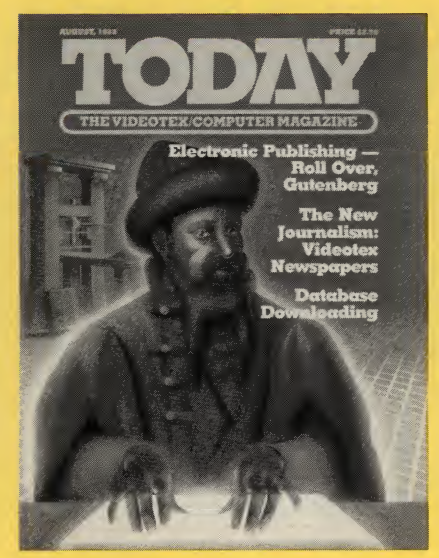

Cover
"Gutenberg Goes On Line"
This month TODAY takes a look at the world of electronic publishing in the '80s.
Illustration by Doug Miller

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Letters

Please address your letters to CompuServe electronic mail, ID number 70003, 1372 or to: Editor, TODAY magazine, 5000 Arlington Centre Blvd., PO Box 20212, Columbus, OH 43220. TODAY reserves the right to edit letters for length, content and clarity.

LANs

I just finished reading the article, "Local Area Networks" (June 1983) and thought Mr. Green did an excellent job of explaining the divergent approaches to LANs. However, I feel he should have researched the PBX as a LAN a little more.

Based on his conclusions, I was left with the impression that the PBX is the worst of the three choices mentioned. If he had researched the PBX, he would have found the Digital PBX systems that are switching at 1.544 MBps allowing throughputs of up to 64 KBps voice and data.

His statement that it is necessary to have a modem when accessing public switched networks is true for off-premise types of data communications. However, with the availability of such data networks as Telenet and Tymnet for direct connection to a LAN, the high-speed throughput can be maintained without modems. Also, major manufacturers of Digital PBX are developing very high speed switches that will use combination topologies to switch voice, data and video to any available transmission media including fiber optics, which promises to render obsolete any LAN topology existing today.

When making a decision on a LAN, don't write off the PBX yet.

James B. Bean
Fairfax, Va.

E-COM

On page 23 of the June issue of TODAY, you mention that the U.S. Postal Service's E-COM is available through EMAIL. However, you do not indicate how material can be entered into E-COM nor is E-COM listed in the Highlights insert.

I would like to know if CompuServe customers will be allowed to access the portion of EMAIL that will permit use of E-COM. If this service is not presently available, when will it be available?

Mike Crockett
Auburn, Me.

E-COM is available in conjunction with CompuServe's InfoPlex electronic mail system, or as a stand-alone product. Currently, E-COM is not available through CompuServe's Consumer Information Service EMAIL, as was mentioned in TODAY. CompuServe is developing this capability, but the company has not yet set a release date.

If you are interested in more information regarding the use of E-COM through CompuServe, you may contact a sales representative at the nearest CompuServe branch office.

Electronic Bounce Back

Instructions/Tips

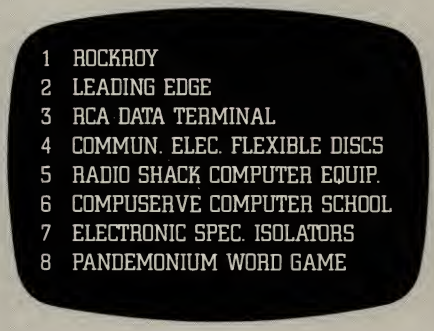
Step 1
To enter the Electronic Bounce Back program, choose item 11, User Information, or GO EBB.

Step 2
After the introductory information, you will be prompted for your name and mailing address.

Step 3
A menu of available issues will then be displayed.

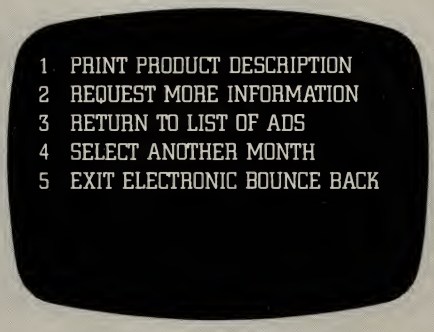
Example:

After entering the issue of your choice, a list of advertisers will appear.



Example:

Step 4
After choosing an advertiser, you will be shown the list of following options:


1 PRINT PRODUCT DESCRIPTION
2 REQUEST MORE INFORMATION
3 RETURN TO LIST OF ADS
4 SELECT ANOTHER MONTH
5 EXIT ELECTRONIC BOUNCE BACK

Step 5a
Selection 1 displays brief product descriptions.

Step 5b
Selection 2 sends your name, address and ID number to the selected advertiser. You will also be presented with a Comment option. You will be given three lines to make your request to the advertiser.

Step 6
After completing your request, the option menu (step 4) will be redisplayed.

Electronic Bounce Back puts you into direct contact with our advertisers.

When you respond to an ad in TODAY Magazine, you're "talking" directly to the advertiser. This means an end to the weeks of delay it takes for an ordinary reader service card to reach an advertiser (not to mention the additional time lapse for an advertiser to answer your inquiry once it is received).

EBB not only lets you respond to an ad with the usual name and address information, but it also allows you to ask for specific information, leave additional comments or in some cases even order a product. The advertiser in turn can reply, if so desired, through our electronic mail system, Email™.

TODAY is the first magazine to develop an "electronic" reader service and take advantage of the 2-way communications capabilities available through the use of videotex technology.

Electronic Bounce Back is easy to use. Just GO-EBB and follow the prompts. EBB will allow you to review an index of advertisers or go directly to the ordering section. Users of EBB will be able to request information from present advertisers in each issue of TODAY as well as from advertisers in past issues.

So GO-EBB and give it a try. We've cut out the middle man so CompuServe customers and advertisers can communicate directly with each other. This means a faster response to your inquiries and an added convenience for TODAY readers.

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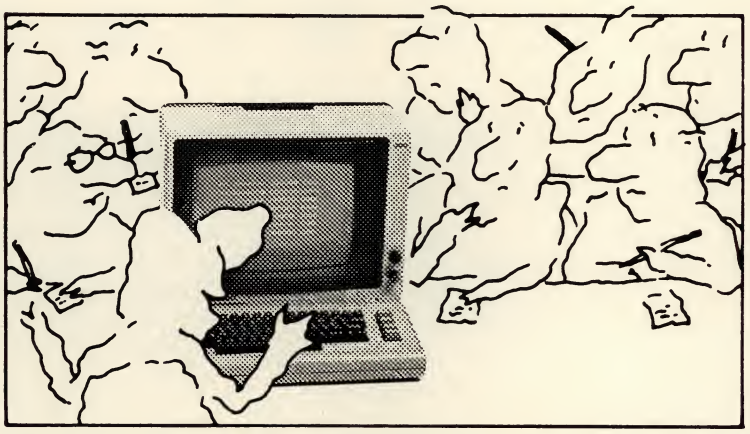

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More on Networking

I read with great interest your articles on networking (June). I was surprised to see little mention of regional bulletin board systems, one of the fastest-growing segments of networking in the country today. There are literally thousands of RBBS covering a wide range of interests and purposes. While most of these systems are limited in scope, any article about networking should include bulletin board systems which is truly networking at the grassroots level.

Robert Halsine
Santa Monica, Calif.

I am a long time CompuServe Information Service subscriber and must say that I thoroughly enjoy videotex and TODAY magazine. I've kept every issue since the first and have observed how the publication has grown and matured along with the technology.

In the June issue, I was particularly pleased to see the articles on networks. As more of us have computers at home and in the office, I would expect many of us to begin our own networks. Perhaps future issues could address this issue.

Joe Berman
Athens, Ohio

Monitor

I enjoy reading the monitor section of TODAY magazine. I am a casual computer user, not into hi-tech, so the feature-oriented articles in this section are more to my liking and understanding. How about an article on the computer and the homemaker, and the many ways she can utilize this valuable tool in day-to-day chores?

Sue Cieslukowski
Toledo, Ohio

Home Fetal Monitoring

In your June 1983 issue I found the article on Home Fetal Monitoring to be very exciting from a nurse's and a mother's point of view.

Those women who suffer from Toxemia during pregnancy or those who have delivered premature infants can now experience a little more peace of mind because of the instant information and response they can get from their home computer. No longer will it be necessary to phone for an appointment for this service or be "worked into the schedule." I hope TODAY magazine will keep us posted as to this service and other health areas monitored by computer.

P. Carroll RN.
Columbus, Ohio

Review Reviewed

In the July issue of Today, there is a review of Glossbrenner's new book on data communication. While the reviewers are familiar with the internals of CompuServe, they show little consideration for those of us who use several networks frequently.

I found the book an excellent collection of most of the information that one need to know to get on line.

The author shows very little bias toward any one personal computer which is to his credit.

This book should be on the shelves of those who have to wend their way to the maze of menus, commands and passwords. Particularly valuable are the sign off instructions.

The only serious omission is the instructions about signing off the packet networks.

I found the book interesting, informative, and find that I am using the networks better (and more!) since reading the book.

Jim Norman
Atlanta, Ga.

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Clean up the computer clutter.

For less than $200 you can make your investment in yourself pay off!

Chances are you have spent a couple thousand dollars on setting up a computer system that gets a lot of your work done. But sometimes it gets to be work to work at it.

I know that when I have to move two program manuals and a pencil holder to boot up the disk drive, it is work. When there is an unlabeled floppy (that I am going to identify some day) on top of the monitor and the business checkbook is on top of the printer . . . and I will remember (I hope) before the next "report" comes through . . . that is work.

MICRO-OFFICE WORK CENTER

I found the annoyance of my own "computer clutter" was even worse than the extra work the disorder created. And that is when I started looking for some practical furniture for my computer set up. Since I had already spent a lot of money on the system itself, I was really dismayed when I found out how much it would cost to get a decent-looking desk or even a data table for my equipment. $400 . . . $500 . . . even more for a sleasy unit that looked like junk! In fact, it was junk! And it took a long time for me to find something that was really worth the money . . . and more.

A lot of my working day is spent with my computer, and I will bet a lot of your time is too. So I figure a "home" for my system—a housing that is good looking as well as efficient to work at—will pay off two ways:

1. Less work: an efficient and orderly layout will save me time and energy.
2. Personal satisfaction: good quality furnishings look better; they just plain feel better to work at too.

So imagine how good I felt to find the "Micro-Office" Work Center! These are fine pieces of computer system furniture that make my office-at-home as pleasant a place to work as it ought to be. And the biggest and best surprise is the low, low price for such good quality.

Here is what you get—all for only $199.95 plus shipping.

- Mar-resistant work surface. Your choice of oak or walnut grained. Work surface height is adjustable to your keyboard, your chair, your height.
- Two shelves plus work surface extender. Both shelves tilt to lock in position so that monitor faces you—in a position that does away with screen glare squinting and neck craning forever. Retainer bar keeps equipment from sliding off shelf. Snap-in bookends hold reference manuals and programs.
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Dear Reader,

A Product of The Information Age

You have in your hands a magazine that is a leader in this month's featured subject — electronic publishing.

The surprise may be that you're holding a product of the Information Age. Many people hang onto the misguided conception that the information industry is somehow bent on exterminating printed material — an electronic "book burning" of sorts. TODAY is living proof to the contrary. Although electronic manipulation of information can result in the replacement of printed material, in the '80s "electronic publishing" more often enhances and complements existing printed publications or services.

With a very lean permanent full-time staff, TODAY is put together each month by a national electronic web of free-lance writers, editors and artists. At the heart of this web is the TODAY Writers' Network (TWN). Everything from initial conception of article ideas to typesetting and all the steps in between are performed on TWN, a product of CompuServe's computer communications technology. The Writers' Network serves as home base to a growing stable of some of America's top computer/information industry and feature writing talent.

This month, two of those top-notch people — both free-lancers working from their homes — are joining TODAY as contributing editors.

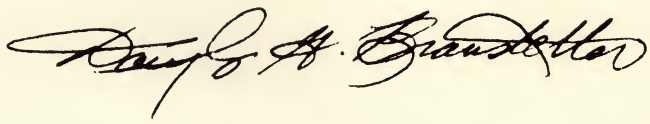
Charles Bowen, a newspaper reporter and city editor for more than 16 years, will serve as systems operator for the newly-created TODAY Writers' Forum — an on-line "newsroom" for TODAY contributors. Mr. Bowen will also continue to provide the magazine with excellent feature material and product reviews.

Ernest E. Mau, an award-winning technical writer and consultant and the author of numerous best-selling computer books, will continue to provide TODAY with networking-related tutorials, reviews and microcomputer articles. Many of Mr. Mau's TODAY articles have attracted industry-wide attention and are the subject of numerous reprint requests.

Mr. Bowen and Mr. Mau will share contributing editorship with Carole Houze Gerber, who has produced much of the magazine's issues-oriented cover material.

The work of some other well known industry writers will be showing up on the pages of TODAY in the coming months. These include William Barden Jr., John Edwards, G. Berton Latamore, Steven K. Roberts and others.

Linked together on a network of the Information Age, these professionals and others will be working to bring you the magazine of the Information Age by using the very technology we espouse.



Douglas G. Branstetter
Editor

NETWORKERS FACE DOUBLE WHAMMY FROM FCC RULING

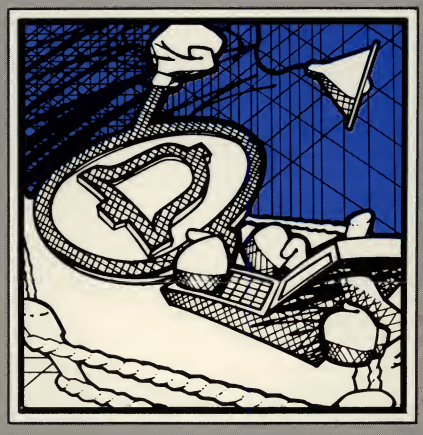
Subscribers to computer information utilities, such as CompuServe and The Source, face a double threat that may make the cost of communicating considerably higher.

At least one local telephone company, Southwestern Bell, has begun charging computer owners who use modems an extra $50 a month beyond normal residential basic connect charges.

At the same time, the Federal Communications Commission (FCC) is considering a major change in the fees paid by interstate data and voice transmission companies, including computer networks, for connections to local telephone systems. This charge could raise the cost of using a packet network from $4 to $6 an hour per customer — a 50 percent increase in a single jump.

Southwestern Bell — which serves Missouri, Arkansas, Texas, Oklahoma and Kansas — is imposing a data transmission line rate on every customer it finds using a telephone line for data transmission.

The flat monthly fee is charged to each computer customer, regardless of whether the computer is for business or personal uses and no matter what amount of time the customer devotes to data communications on the line, according to Deborah Michaels, district staff manager for public relations for Southwestern Bell in Tulsa. The only exceptions the company makes are for handicapped persons who can only communicate using terminals.



The charge is intended to cover the cost of supplying "data grade" lines to these customers, she said.

The data grade rate is not new at Southwestern Bell, although it recently became a public issue in the Tulsa area, Michaels said.

"We've been levying this rate right along. It just happened that a customer complained that he was getting annoying and obscene messages through his computer. We checked our records and found we were charging him the wrong rate. The story was reported in the local papers."

Southwestern Bell is one of several local telephone operating subsidiaries which will be separated from American Telephone and Telegraph Co. (AT&T) on Jan. 1 under an FCC deregulation.

As part of the deregulation, many telephone companies are seeking state approval for changes to their rates structures.

In Southwestern Bell's case, the company wants to eliminate the present basic rate system for local calls which is based on average usage. In its place, Southwestern Bell would charge each line according to actual volume of use of that line, much as water companies charge.

The use of each line can be constantly monitored by computerized switching equipment, Michaels said. This rate change, however, first must be approved by each state public utilities commission.

The AT&T divestiture also is the reason for a separate FCC proposal that would increase charges for data network communications to local telephone systems. The proposal, called "Docket 78-72," follows a three-year FCC study of the relationship the fed-

SMART CARD IS DRAFTED

The U.S. military is testing a French invention called Smart Card as a high security ID card for 3,000 servicemen at Fort Lee, Va.

If it passes the test, the computerized card might replace laminated IDs used throughout the services and save the government millions of dollars, military officials say.

And if the inventors of the card are right in their predictions, you may be using Smart Card in the next three years in electronic banking.

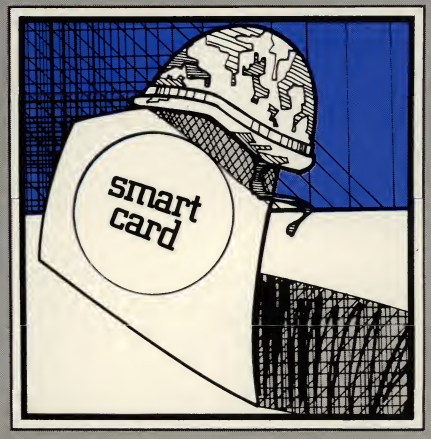
In the Fort Lee test, the card, which contains an embedded computer chip with the capacity for both computation and permanent data storage, carries a soldier's full identification, both embossed on the outside and stored in the chip.

If a serviceman wants to use the base P.X., hospital, clinic or other services, he will identify himself by putting his card in a reader and entering his personal identification number. If this matches the card's own secret identity number, he is cleared to use the facility.

The six-month Fort Lee test, called RAPIDS (Realtime Automated Personal Identification System), will measure Smart Card's effectiveness in reducing the $60-million annual loss caused by lost, stolen and forged military ID cards.

Smart Card will be manufactured in the United States under an agreement between Innovatron of France, holder of the international patents to Smart Card, and SmartCard International, New York.

The card was designed as an electronic checkbook and Arlen Richard



Lessin, president of SmartCard International, sees its future in home banking services, where it can add security

eral government wants between independent local telephone companies and the interstate long distance networks. Those long distance networks include AT&T's long lines and WATS, which AT&T will retain, and their competitors such as Sprint and MCI.

The plan would establish two classes of connectors to these local systems — end users and long distance carriers, according to Robert Preece of the FCC policy division. The "end users" would include business and private telephone users, while the latter group would be long distance voice and data networks. The long distance carriers would pay about 10 times the rate charged to business end users for each connection to a local system.

This kind of order is necessary, Preece said, because of the dramatic way in which the divestiture of AT&T will change the relationship between the local companies and the nation's dominant long distance voice carrier. Presently, AT&T uses income from its long distance service to subsidize its local groups. After Jan. 1 that will end, with the local groups becoming separate companies.

Under the FCC proposal, data carriers are included with voice networks, Preece said, because the connections technically are the same dial-up and dedicated lines, and the FCC could not discriminate between data carriers and voice systems.

"The commission is very concerned with discrimination between essentially similar services," he said. "It has taken the view that if you are involved in interstate transmission you are going to pay the same connection rate."

This approach, however, flies in the face of the FCC's 1981 Computer Inquiry decision, according to Joe Porfeli, vice president for network services for CompuServe, Columbus, Ohio. This decision, he said, distinguished between data communications networks including packet networks and the common carrier voice networks.

The basis for the difference is that the enhanced networks do more than passively carry data — they have automatic error-checking and correction to eliminate data errors caused by faulty transmission within the system.

The inclusion of data networks in Docket 78-72 came as a surprise and shock to the data processing industry, Porfeli said, because the discussion until then solely concerned voice carriers.

The potential impact of the order on the packet networks is huge because of the large number of connections involved, he said. The networks work by passing messages between special minicomputers called "nodes." Each of these may have several hundred dedicated and dial-up connections to a local telephone network. The full size of a large network may be judged by Tymnet, one of the world's largest, which just installed its 1,000th node.

Porfeli said the total cost for a local "loop" serving 100 users at a time presently averages about $15 per hour. If the proposed rates are adopted, that cost will increase by $200 an hour or $2 per user per hour, he estimated.

This still would leave the packet network as the least expensive means for data communications, but it would close the gap. The next least costly choice, WATS lines, costs $17.50 an hour.

CompuServe and several other networks have filed petitions with the FCC for reconsideration of Docket 78-72. Preece said the FCC received more than 30 petitions during the public comment period, which ended in May. The commission was expected to act on these petitions during the summer.

"We have received petitions from state regulatory bodies, AT&T, a number of competitors to AT&T's long lines, local telephone companies, GTE Telenet, Tymnet and the Association for Data Processing," he said. "The list is pretty impressive."

— G. Berton Latamore

and complete the automation of the checking account begun by electronic banking.

Smart Card can hold records of bank or charge account transactions and an automatically updated balance. Terminals can be used off-line in stores as electronic "cash registers," recording the transactions on electronic tape. Store managers can deposit the tapes with his bank to be fed directly into the bank computer. The computer then arranges electronic transfer of the funds to cover the purchase.

Lessin said he expects his company to gross $1 billion a year by 1987 as the card is used in banking. Presently three French companies are making Smart Cards.

J.C. PENNEY ENTERS VIDEOTEX MARKET

Retailing giant J.C. Penney Co. Inc. says it will establish a national home videotex system in the next three years, with hopes of reaching a million customers within five years after it starts.

The service, tentatively called Firsthand, will feature color high-resolution graphics, using French Teletel technology. It will begin simultaneously in several cities, possibly as early as the first quarter of 1984, according to Roy Bright, head of Intelematique, the French agency charged with international promotion of that country's videotex and related technologies.

It's undecided which American cities will get premieres of Firsthand, but Minneapolis probably will be on the list, company officials said.

The service will be owned by a partnership Penney is forming with five money-center banks and at least one major newspaper publisher or television network. One of the partners will be First Bank Corp. of Minneapolis, from which Penney bought the original experimental videotex system last March, according to Firsthand Project Manager Jeff Sternberg. Other partners had not been announced by press time, because these negotiations were not complete.

Home banking is expected to play a major role in Firsthand, Sternberg said. The service will be marketed originally in the home cities of the partner banks by those banks.

In addition, electronic news, mail and other services will be supplied to all these cities from a single national database with electronic banking

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5¼" DSDD 16 Hard Sector w/Hub Ring	**52416**	2.79
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added in each location by the local bank, Sternberg said.

Penney probably will offer an electronic catalog with an on-line order form on the service, but Sternberg said Penney is mainly interested in videotex as a business in itself rather than as an outlet for electronic shopping.

As implemented by First Bank Corp., the experimental version of Project Firsthand offered low-resolution alpha-mosaic graphics built of small colored squares. The commercial version of Firsthand will be upgraded to offer high-resolution alpha-geometric graphics and an expanded color pallet to meet the North American present level protocol videotex standard proposed by AT&T, Sternberg said.

However, he added, the system will be designed to allow people with microcomputers that cannot display these graphics to receive the database either with lower level graphics or none at all.

Firsthand also will experiment with a computerized device called Smart Card, which is a plastic card the size of a standard charge card carrying an embedded computer chip. When inserted into a terminal, it is capable of encoding and decoding messages.

Initially small numbers of cards will be used in an experiment testing the card's usefulness as a security device, if it proves effective, Firsthand may adopt the device systemwide.

Most of the Firsthand team moved from First Bank Corp. to J.C. Penney in March, and the members are now implementing the service on Penney's IBM mainframe computers. It ran on Honeywell machines at First Bank.

When this is accomplished, Sternberg said, they will reimplement the original experimental network which reached about 300 farmers in North Dakota. A separate service reaching an urban population of the same size may be started in the Minneapolis area as an experiment at the same time, he said.

Sternberg said that, while limited commercial service may be available next, the full expansion of Firsthand is five to seven years away because it will take that long to develop software to handle the heavy usage on the system.

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AP

ELECTRONIC PUBLISHING:
On-Line Knowledge of the World

by Carole Houze Gerber

"The wave of the future," cry technologically-secure proponents hooked to terminals on which they send and receive all types of information.

"You can't curl up with a good computer terminal," snipe technophobic traditionalists. "It's not portable, it's not practical, it's not personal."

"What will happen to our libraries?" ponder the scholars. "How will it affect our privacy?" demand the lawyers. "Who will produce our books?" moan the publishers. "And when," worry the social scientists, " will we know its effect on our lifestyles?"

Electronic publishing — the transmitting of textual and graphic information via videotex and teletext systems — will be available to an estimated 15 million homes by 1990. The potential uses, maintains British communications expert Anthony Smith, go far beyond simply retrieving stored information from databases. "Today," he has written, "a major break with the past is clearly at hand, and with it will come an important shift in the way we treat information, the way we collect and store it, the way we classify, censor, and circulate it . . . . We shall think of librarians, journalists, editors, and publishers as different creatures from those of today, since they will be involved in different mutual relationships, using a different technology."

Many believe we've been in line for a new information technology for quite some time. The basic form of bound books, for example, hasn't changed much for 500 years. And prior to the 15th century when Johann Gutenberg introduced movable type, the techniques employed for recording information, including stone tablets and papyrus scrolls, had remained unchanged for fifty centuries. In addition to doing more for literacy than any other single invention, the printing press accomplished a more subtle but equally profound function: It took the mechanics of delivering information out of the hands of intellectuals and made it a task for technicians. Before Gutenberg, merely being able to record the words of others was a calling worthy of great privilege and respect. "Become a scribe," a teacher exhorted his students in ancient Egypt. "You will be free to come and go and not be yoked like an ox which is bartered. You will take precedence over others."

Considering the advantages of electronic publishing, this ancient advice could be reworded to change in content but not intent. "Become an on-line user," the modern teacher might say. "You will be free to travel the knowledge centers of the world and not be yoked to libraries, bookstores, or the delivery schedule of your newspaper. For the price of a terminal, modem and time sharing service, you will save time, shoe leather and aggravation."

Libraries of the Future

Anyone who has ever been disappointed to learn that needed library information has been ripped out, ripped off, or is simply unavailable should find the new information technology a godsend. Some libraries already have access to huge amounts of data through computer memory banks that link them at central locations around the country. Many others have, at the minimum, done away with the card catalog, replacing it with a "browsing terminal" that can rapidly perform electronic searches. Some complain that libraries are slow in offering on-line services to their patrons. But, according to S.D. Neill, professor and founding faculty member of the School of Library and Information Science at the University of Western Ontario, it's unfair to expect libraries to be in the forefront of the new technology.

"As non-profit, tax-supported institutions, libraries are in a difficult position when it comes to manipulating events and taking chances," he has said. "Planning for change means waiting for those who use libraries to change. Librarians cannot guess about the future. They must wait while others guess, and then move to provide the information needed."

One problem public libraries will face in making on-line services available, according to Cleveland Horton, managing editor of *Advanced Technology/Libraries*, is the tradition of free access of information. Will some patrons, he wonders, be unable to afford the library of the future? And, he adds, once the majority of library users have access to the same information databases via home terminals, people may not bother to use on-line library services unless they are free of charge. While some predict that in the future most libraries will offer free on-line services, Horton says he doesn't believe this will occur. A recent survey conducted by *Advanced Technology/Libraries* of 50 public, academic and special libraries showed that many libraries do charge for database searches.

"Whether there was a charge depended on the type of library," reports Horton. "Corporate libraries generally do not charge patrons for searching databases. But among the academic

ON-LINE DATABASES FLOURISH

On-line information is quick and convenient — and a burgeoning business that grows more rapidly each year. According to *Online Bibliographic Databases: An International Directory* by James L. Hall and Marjorie J. Brown (Aslib, London, 1981), no large public access systems existed until about 10 years ago, when only about three-million references were available online.

Results of a recent survey by *Advanced Technology/Libraries* show that the four major North American library utilities in the past five years have boosted the size of their on-line bibliographic databases by an average of more than 149.9 percent. According to the AT/L report, OCLC, Research Libraries Group, University of Toronto Library Automation System and the Washington Library Network hold some 25.6 million machine-readable records. The four databases, which contain records for all types of cataloged items, are built by loading Library of Congress MARC (Machine-Readable Cataloging) tapes into the system as well as through input of original records by members.

OCLC, a not-for-profit computer library service and research organization located near Columbus, Ohio, remains the largest bibliographic information vendor based on the size of its database. The company operates an international computer network that libraries use to acquire and catalog library materials, order custom-printed catalog cards, arrange interlibrary loans, and maintain location information on library materials. Since 1979 OCLC has grown from 4.5 million files to 9.1 million as of January 1983 — a growth rate of 100.4 percent. Members annually contribute about a million records to OCLC. In addition to input from its 6,000 patron libraries and the Library of Congress, OCLC derives its records from the National Library of Medicine and the U.S. Government Printing Office. OCLC participants can use either teleprinter terminals or cathode ray tube (CRT) terminals for dial access. An acoustic coupler or a Bell-compatible data set is also required.

The three major encyclopedia databases, ORBIT, DIALOG and Bibliographic Retrieval Service (BRS), as well as hundreds of other databases available through CompuServe, The Source, and other information utilities, provide staggering amounts of information directly to home computer owners. DIALOG alone offers more than 55-million records. Not surprisingly, the home use of on-line databases is growing as information becomes easier to access and quicker to obtain.

Consumer behavior studies by the consulting firm of Arthur D. Little show there is a strong market for goods and services that save time and increase convenience. The study, reported in *Goodbye Gutenberg: The Newspaper Revolution of the 1980's* by Anthony Smith (Oxford University Press, 1980) also indicated an increase in time-consuming individualized activities in which work and hobbies become intertwined. Future demand for all forms of electronic publishing, including on-line information retrieval, will grow as more people purchase home computers. For modern-day Gutenbergs, the future looks bright indeed.

— C.H.G.

libraries surveyed, 85 percent reported that they pass along charges to their patrons, while 57 percent of public libraries queried said they charge for searches."

Horton's survey results show that typical monthly library connect charges are not cheap. Corporate and special libraries spend about $1,600, academic libraries averaged $1,300 and public libraries surveyed reported spending approximately $600 a month for on-line services. Although some libraries do not charge patrons for searches — New York Public Libraries, Horton says, are not allowed to charge for connect time — most limit searches to the less expensive databases such as ERIC and Medline. "Most libraries refer patrons to fee-based services for more expensive searches such as ABI/Inform, which costs $50 an hour, or Management Contents, which is $65," Horton says.

As databases proliferate, according to S.D. Neill, the functions of librarians will be adapted to the new technology. "By the year 2010," he has written, "nearly 60 percent of librarians will be self-employed or will work out of libraries under contract to small businesses, community groups, or even individuals willing to pay for special services." Horton, on the other hand, points out that as electronic searches become faster, cheaper and easier to use, many people may no longer need the help of librarians to navigate databases. "Librarians will always serve the function of guiding patrons who need help," says Horton, "but some people believe their job outlook in the 21st century will be grim."

The cost of on-line information still has a long way to go before it becomes as cheap as print services. Government figures show that average monthly expenditures per household for all forms of print materials in 1980 was $7.25, while the bills for those accessing the electronic media averaged more than two-and-a-half times that amount. But, as Alfred Glossbrenner points out in *The Complete Handbook of Personal Computer Communications*, although a search, for example, on DIALOG, a commercial on-line encyclopedic service containing nearly 200 databases, costs $15.86 for less than 11 minutes, it includes — among other things — keyword searches of more than 500 magazines and journals from all over the world.

"When you consider the alternative of driving to the library and consulting a variety of printed indexes, then going to the library shelves to locate the appropriate volumes, reading the articles, and paying for the photocopies," Glossbrenner has written, "then $15.86 begins to sound very reasonable indeed. When you add to this the fact that very few libraries are likely to possess reference books covering all 500 journals, let alone the journals themselves, $15.86 begins to seem like a real bargain."

The question of privacy

Although few dispute the obvious benefits of electronic publishing — British database researcher James L. Hall says, as a medium, it most nearly puts the inquirer "instantly in touch with a substantial part of mankind's memory" — some worry that it may also make private information dangerously accessible. A 1977 study commissioned by the government, "Personal Privacy in an Information Society," entailed an extensive, two-year examination of individual privacy rights and record-keeping procedures in banks, consumer credit organizations, insurance companies, investigative reporting agencies, and many other organizations. Among the findings of the Privacy Protection Study Commission's 654-page report, was the conclusion that an effective privacy protection policy must have three concurrent objectives: to minimize intrusiveness, to maximize fairness and to create legitimate, enforceable expectations of confidentiality.

A big problem, according to attorney Richard M. Neustadt, electronic publishing expert with the firm Wylie, Johnson and Rein, and author of *The Birth of Electronic Publishing* (1982, Knowledge Industries), is that privacy laws have not kept pace with advances in technology. "While physical privacy concepts are deeply rooted in common law," he says, "privacy for personal information is a new and poorly-established principle. Present laws were written during a simpler era in communications technology, and they leave wide loopholes in protection of data transmission."

Electronic publishing and home transaction services such as electronic mail that transmit personal information raise the danger of interception, warns Neustadt. Further, he adds, videotex services that sell information by the page or provide transactions will collect massive, computerized files on subscribers' behavior. "It's the same kind of information as bank or insurance records," Neustadt says, "and existing privacy rules are woefully inadequate to protect this data."

Privacy can be violated in several ways, according to Neustadt, who says that cable subscribers using special equipment could pick up signals coming from or intended for other subscribers. Another method of eavesdropping would be through telephone taps or by figuring out how to dial into the central computer where records and messages are kept. In addition, he warns that law enforcement agents may put recording equipment directly into videotex switching centers or on the lines that carry videotext signals.

Presently, operators of videotex systems are legally free to sell an individual's files or allow government agents to examine them — all without noti-

By the year 2010, nearly 60 percent of librarians will be self-employed or will work out of libraries under contract to small businesses.

fying the subscriber. The solution, says Neustadt, is a set of rules for handling this personal data, most of which were conceptualized by the 1977 Privacy Protection Study Commission. "The Commission's report and subsequent work in the cable area, suggest seven principles for safeguarding videotex records," he says. "These include notifying subscribers of a system's two-way capabilities and of any records the company intends to keep. Subscribers should give written consent for collection of personal information, and should be able to sign up for services without having individually identifiable information disclosed to third parties.

"Furthermore," Neustadt adds, "subscribers should have the right to see, copy and correct — at their own expense — any records concerning them. These records should only be available to government officials in response to compulsory legal process. Records should be destroyed when no longer needed and the company should keep the records secure. Finally, the company should be liable for damages resulting from misuse or unauthorized disclosure of records."

The key legal principle involved, says Neustadt, is that each subscriber should be told in advance how the records will be used. Some people, he points out, may want their records disclosed — for example, those who want to be put on mailing lists. To date, Illinois is the only state to forbid installation of monitoring devices or disclosure of subscribers or viewing habits without prior consent, but many city councils are using the cable franchise process as a vehicle for setting privacy rules.

"Concern about privacy rules and videotex is legitimate," Neustadt says, "but remember that the privacy threats are only theoretical — no cases of abuse have been reported so far — and the proliferation of a variety of rules could create big headaches for system operators by forcing them to maintain hundreds of separate records systems. An industry-wide privacy code is the best answer."

On-line Authors

According to his biographers, American literary giant Thomas Wolfe penned his masterpiece, *Look Homeward, Angel*, hunkered over the edge of a refrigerator. A tall man, Wolfe

SYBEX: TECHNOLOGY FEEDS THE MASSES

In a world hungry for computer books, SYBEX feeds the multitudes. With several dozen titles to its credit since it began in 1976, the Berkeley publishing firm plans to release a book a week in 1983.

Founded by Rodnay Zaks, who holds a doctorate in computer science from the University of California at Berkeley, the firm is managed by computer specialists rather than publishing professionals. Zaks, who in 1972 published the first paper on microprocessor applications, initially formed SYBEX to offer computer education. Besieged by requests for seminar materials and tired of a travel schedule that took him to his native France and other European countries as well as the United States, Zaks decided in 1977 to use his notes to write *Industrial Microprocessor Systems*. When his first small 5,000-copy run sold out in only two weeks, he knew he was onto something big.

Reports from bookstores bear out his early optimism. B. Dalton, one of the nation's largest bookstore chains, has predicted that computer books will outsell fiction in 1983. Sale of computer books last year at B. Dalton increased 150 percent from the year before, according to *BP Report*. A spokesman for the large Waldenbooks chain told *The Wall Street Journal* that its stores are selling more computer books than cookbooks.

The computer book market has certainly paid off for SYBEX, which has more than doubled its sales each year since 1976, its president reports. Zaks, who writes many of the books published by his firm, says that SYBEX authors were among the first to be able to submit manuscripts directly on computer disks. In early 1980 SYBEX moved to a complete "author-diskette-to-photo-typeset-gallery" production process. Software was developed for SYBEX computers which enable its authors' computer programs to be typeset and formatted automatically to assure total program accuracy.

Says SYBEX Editor-in-Chief Rudolph Langer: "Since SYBEX was publishing books about microcomputers, we decided it was only right to use microcomputer technology to do it. We don't handle typewritten manuscripts. If the author does not have a microcomputer to work on, we lend him one."

Authors transmit their manuscripts to the publisher by magnetic disks, which are edited on word processors, then transmitted to a photocomposition machine (Compugrafic MCS 8400) where the copy is turned out in final form. The time needed for production is remarkable — Langer says the Timex Sinclair 1000/ZX81 took only 15 days from manuscript to finished book.

An added plus, he says, is that, due to typesetting and proofreading costs, computer demonstration programs reproduced the old-fashioned way were actually photo reductions. Because of their size, they were difficult to read. Now, Langer explains, programs are printed as large displays. With more than 100 colleges using their books in computer courses, easy-to-read demonstration programs give SYBEX an edge in the education market.

Because it's run by computer professionals, Zaks says SYBEX has been able to predict technological trends, and act quickly on them by using high-tech authors and in-house computerized book production to beat out the competition. So far, their start-to-finish reliance on computer technology has paid off. As their advertising slogan so succinctly puts it: "We're writing best sellers as fast as the market grows."

— C.H.G.

claimed desks cramped his style and the upright stance provided a comfortable position for gripping his pencil. Legend has it that as he wrote each page, he threw it behind the refrigerator to be picked up, sorted and edited by an underling.

Half a century later, writers running the gamut from Norman Mailer to Stephen King bypass paper to create their books electronically. The new method, says Gerald Phillips, professor of speech communications at Pennsylvania State University and editor of *Communication Quarterly*, benefits readers as well as authors. "Skillful use of the word processor results in greater clarity and order in written messages," he maintains. "It takes the drudge work out of revisions because you can make corrections almost as rapidly as you do in speech."

Pennsylvania State University professor Gerald Phillips on word processing: "Skillful use of the word processor results in greater clarity and order in written messages."

Phillips, who says his writing output has more than doubled as a result of going electronic, is hooked into an on-line writing syndicate and research network of colleagues around the country who are examining gender differences in communication. "We feed into one central computer and combine data from various locations," he explains. "It's better than having a committee meeting — it's very efficient."

Another project of Phillips' is the on-line management of a textbook. The authors transmit most of the information to him electronically for organizing and editing. "It's a real time-saver," he says enthusiastically. Phillips' assessment is not atypical. By some estimates, the amount of time saved by on-line linking of writer, editor, publisher and typesetter is as high as 50 percent. Advances in computerized page make-up to integrate text and graphics, and simultaneous entry of books into databases as they are published will streamline the industry — saving time, money and aggravation.

Besides all the practical benefits of electronic publishing, there's an even nicer one — it's fun! Some users of the Electronic Information Exchange System (EIES), a computer-based communication system at the New Jersey Institute of Technology, are writing an on-line soap opera. Members of a CompuServe Literary Special Interest Group (SIG) are writing an on-line novel. "Although it's technologically-based, electronic publishing is really a human system," notes one EIES member.

While electronic publishing can add to the information base by taking the drudgery out of writing, research and retrieval of facts it can also, warns Michael Marien, result in "infoglut." Marien, editor of *Future Survey*, a monthly publication of the World Future Society, notes: "Paradoxically, as more information is made available to us, we become less well-informed and decisions become harder to make. It may be hard to use wisely the vast amounts of information at our command. A fully-wired society does offer great potential because, ideally, one has access to all that is known or thought about a subject . . . . Despite the potential of these new tools, there's no reason to expect any decrease in miscommunication or flawed communication."

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The Book of the Future

The late Christopher Evans, author of *The Micro Millenium*, predicted that books will someday be compressed into computer chips and sold for 20 cents apiece. Elie Shneour, director of the Bio Systems Research Institute in La Jolla, Calif., has written that paper and labor costs for traditionally printed books have driven up the price and reduced the potential audience. Henry B. Freedman, publisher of *Technology Watch* magazine, contends that while electronic publishing has introduced new flexibilities for communications that both enhance and, in some cases, substitute for paper, the current trend is toward more paper being consumed rather than less.

Where, then, will future bookworms find their volumes? Stacked on shelves, compressed onto chips or stored in databases? The most realistic answer is that information will be available in a variety of forms and users will select the format that best suits their needs. For leisure reading, obviously, databases offer an expensive alternative to a bound book. For research, as Alfred Glossbrenner illustrates, when factors of time, availability and convenience are considered, information retrieval from databases is usually superior to more traditional methods.

Most social scientists would agree that human beings generally resist change. When papyrus replaced stone tablets there were undoubtedly stubborn individuals who clung to their rocks, convinced the flimsy stuff would never catch on. Indeed, stone tablets are still used for tombstones and monuments that must endure the elements. And in the hubbub that surrounds change, great debate over what later are viewed as minor issues, often obscures the magnitude of the contribution. In the final analysis, electronic publishing is no more likely to completely replace traditional information sources than the telephone is likely to totally take the place of letters and face-to-face communication.

As Richard M. Neustadt, attorney and videotex expert, so wisely points out, it's people who control technology. "Teletext and videotex may become a primary information medium by the end of the century," he says. "On the other hand, the development of electronic publishing will take a decade or more, and it may not get far at all. The success of this medium depends, finally, not only on the creativity of its promoters but on the public's willingness to accept it."

Carole Houze Gaber is a contributing editor to TODAY magazine.

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AMERICAN JOURNALISM IN THE '80s

Caught Between the Industrial and the Information Revolution

by Byron Scott

The scene is Washington, D.C. The famous editor of an equally famous newspaper is lunching with an executive from a company working with the new, electronic medium called "videotex." Fine china and crystal tinkle decorously in the background as the editor asks his guest a few questions.

"So you can take news items and deliver them to readers directly, using their computers or TV sets?"

"Yes, we can," the executive replies.

"And how long after you get a news item can it be actually viewed?"

"Oh, about six seconds."

"Six . . . six," the famous editor sputters. He pauses, darkens in facial color, then declares in a voice that threatens to shatter both crystal and china:

"Not in my damn lifetime you don't!"

It should be quickly added that the publisher of this newspaper, like a growing number of American publishers, is now actively experimenting in disseminating its news via videotex. Although many newspapermen use the same snide hostility they greeted television with in the early 1950s, remarks like "You can't take a computer to read in bed," or "You can't wrap your garbage in it," somehow have less sincerity. In fact, the industry appears to be adopting, rather than shunning its newest rival.

Late this spring, a joint study by the American Newspaper Publishers Association and the National Association of Broadcasters found nearly half of over 1,000 publishers, big and small, are "considering, planning or participating in or operating some kind of venture" in electronic news dissemination. Although less sophisticated techniques currently predominate, such as non-interactive cabletext, most respondents to the ANPA/NAB survey plan to go into interactive systems. Long term, the study reported, most newspapers going into electronic publishing are considering videotex.

Death of newspapers?

Will videotex be the death of newspapers? Television wasn't. Neither was radio. Even though print media doomsayers have been around for generations, newspapers appear to be betting that videotex will help rather than hurt the industry. Not that they aren't wary and perhaps a little scared, but the presence of the largest newspaper chains and some of the largest individual papers in the youthful videotex industry indicates a multimillion-dollar interest. Is running your own videotex system, or participating in such a system, "knowing your enemy" as one publisher put it? Or is it inviting the fox into the henhouse?

"This interconnection between computer and text," writes Oxford University scholar Anthony Smith in a study ominously titled *Goodbye Gutenberg*, "one may justifiably consider a third great turning point in information systems." (The first two were the inventions of writing and of printing.) The key is the control of information, not the format for it.

Increasingly, newspapers are coming to realize that they are selling information, not print-on-paper. "Maybe the newspaper in the year 2000 will be the guide to the database," comments Luke Feck, editor of the *Columbus* (Ohio) *Dispatch*.

Computers and newspapers have been allies since the 1960s. Electronics is present everywhere — from video display terminals in the newsroom to electronic typesetting and page composition to control units for the printing presses themselves. Yet, while the ANPA/NAB study indicates videotex is a major future trend with most major chains involved, only a handful of American newspapers are currently beyond the experimental stage with their videotex delivery systems. Casey Stengel would have commented on the situation, "their future is ahead of them."

Why? The central reason is easy to

come by. While computerization has changed the methods of newspaper production, videotex threatens to change the newspapers themselves.

Some of these changes will be particularly difficult, editors and publishers agree. Among them:

•The news must be written differently
•Readers are in control of the news search
•Advertising will have to find a new form
•News will not be the principal product
•Production and distribution are in the hands of others

Electronic wanderlust

A cooperative study involving 11 newspapers, the Associated Press and CompuServe and completed in 1982 discouraged some participants. They could not understand why their successful print-on-paper product was not popular on the screen. The culprit was a new kind of customer.

The *Washington Post*'s reading of the results showed them how to proceed. "We noticed that over 80 percent of accesses were from users at distant points where you can't get our paper the same day," explains Hal Logan, manager of electronic publishing. "However, we do have information of importance to middle managers and top managers — revelations about the federal government and its actions . . . We extrapolated that this was the kind of information we should continue to provide on *Washington Post Newsletter*," which continues to run on CompuServe. The new "information-seeking reader, not the reader who takes the paper for entertainment," is being served, Logan explains.

"Simply dumping existing newspaper, magazine or wire copy on the screen can be an editorial disaster," explains Jerome Aumente, director of the Journalism Resources Institute at Rutgers University in a new study on electronic publishing. Interactive services are forcing newspapers into "a rethinking of traditional assumptions about how to write, edit, package and market news." Studies to date show the videotex user responds best to a kind of writing that transmits news quickly, in a fact-packed format and in relatively few screens (pages). Even the best-written traditional news stories contain unacceptable redundancies and other barriers that traditionally pass unnoticed. The impatient videotex reader will abandon the story at any time to wander among thousands of other screens.

This electronic wanderlust also bothers many editors. "Videotex takes most news judgment out of the editor's hands and gives it to the consumers," says Henry Heilbrunn, editorial director of the CBS/Venture One videotex experiment in Ridgewood, N.J. Using Venture One's "Fastrack" option, for example, readers can preselect the type of news they want to see and get that — and only that — automatically after signing on.

Courtesy of Columbus Dispatch.

Columbus Dispatch Editor Luke Feck: "The American newspaper business is planted in the Industrial Age."

Newspapers always have assumed that readers will ignore whatever fails to interest them; however, on their way to the sports or the comics they may well be seduced by headlines or photos of other more vital news. Except for brief headlines on those menu pages chosen, unselected videotex news is transparent. "The reader may not get to see what they should know about. And that bothers me more than a little," notes Larry Blasko, who directs the Associated Press' videotex activities.

Another thing that videotex users may choose to ignore is advertising. And that possibility is keeping many publishers on the sidelines. Like most mass media, newspapers fall within the price range of the average consumer because advertisers pay the bulk of the costs. "When it's conclusively proven that videotex will support advertisers and that advertisers will support it, a lot of print people will jump in," says Heilbrunn. He adds that he thinks this will happen. "Advertising is another type of information. What videotex users want is information," whether it is the closing stock market quotes or tonight's special at a local restaurant.

Advertising will have to find another form than it takes in newspapers, even with the comparatively sophisticated graphics of newer videotex systems. It's generally agreed that more depth will have to be supplied to get the reader into the ad and keep him there. "But videotex ads can do something that print ads can't do," points out Heilbrunn. "They can 'ask for the sale,' and get it, by way of the computer." Such "shop-at-home" modes provide effective, substantial feedback to the advertiser.

Shop-at-home, bank-at-home, games, electronic mail . . . the roster of videotex services continues to grow. It will prove difficult for newspapers to realize that "they are perhaps only 10 or 15 percent of the usage," he adds. In a newspaper the star is always the news; even if "Peanuts" and "Dear Abby" get a lot of attention. But current studies indicate that users will not subscribe to a single service system. On the contrary, the more rings in the electronic circus the better.

Of the traditions newspapers must break to become active in videotex, perhaps the easiest to abandon will be the control of production and delivery systems. Virtually all American newspapers are printed on presses owned by publishers, transported on trucks also owned by them and delivered by boys and girls paid by those same publishers. The costs and complications are enormous and growing. Although some newspapers own mainframes for videotex distribution, even *The New York Times* recently abandoned this function to a time sharing computer house. And, of course, publishers don't own telephone companies.

That last little detail is being handled in a relationship as innovative as videotex itself. "Ma Bell," that same AT&T vilified by newspapers in last year's Congressional hearings, is a partner with Knight-Ridder in its Viewtron service and with CBS in Venture One. In Chicago, a partner with the

Continued on page 48

A DAY AT AP VIEWDATA

The Immediacy of Broadcast With the Permanence of Print

Most Manhattanites are still dawdling over morning coffee, but Cindy Canoll has been putting stories on the Associated Press' Viewdata wire since 4:30 a.m.

From a cluttered cubicle on the fourth floor of AP's Rockefeller Center headquarters, the supervisor of the four-year-old videotex service has been filing dozens of news stories, including:

•Five updates of the rising death toll in a Japanese earthquake.

•Three stories adding details about the assassination of a U.S. military advisor in El Salvador.

•Last night's late baseball scores from the West Coast.

Ordinarily, Canoll doesn't work the early shift in Viewdata's 21-hour daily schedule — no stories are filed between 2 and 5 a.m. — but today a doctor's appointment by one of the other three staffers changed the routine.

"We always start out the day by 'reading in,' " she explains, pausing to sip a cup of tea and handing over an inch-thick sheaf of stories printed out from AP's DataStream wire. "These came in since midnight. . ." DataStream is aptly named. From a toaster-sized printer placed between Viewdata's twin Atex input terminals a ceaseless stream of paper chatters forth, covered with all the AP's major stories. It's the job of Canoll and her staff to select, edit and perhaps rewrite some of these stories for Viewdata, then send these to the service's customers. Occasionally they write and include stories of their own, although the primary task is editing, not original reporting.

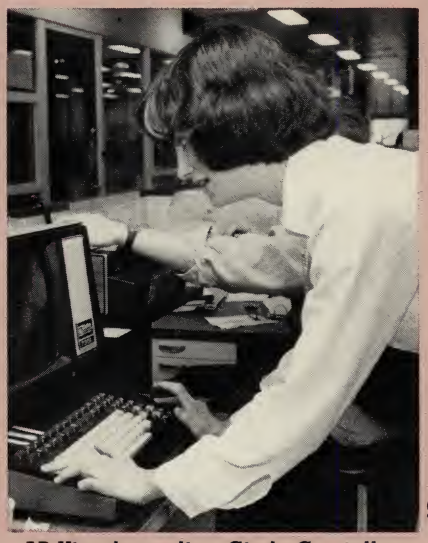
Videotex services now using what Canoll and her colleagues produce include CompuServe, Knight-Ridder's Viewtron, Times-Mirror Corporation, the Orlando Sentinel, the Milwaukee-based AgriData and Dialcom in Silver Spring, Md.

More than 200 stories averaging about 300 words each go out on the Viewdata wire daily. "You're never at the end of the race," Canoll says. While the rest of the AP is thinking in terms of the morning or afternoon "cycles" or deadlines of its member newspapers, the videotex consumer has minute-to-minute demands. "You get the feeling you're dealing directly with the reader," Canoll observes, "and that's fun."

The emphasis at the Viewdata cubicle also is on immediacy; speed reading, rapid editing and instant news judgment. "You try to think about the readers, of course, but you get the top stories on first," she says. "After that you look for stories of special interest to computer users, to businessmen, to sports fans; the kinds of people surveys show now use videotex."

At "The 10:30 Meeting," a part of the AP day reknowned in the world of journalism, two dozen of AP's top editors review the top stories expected during the day. Canoll attends to identify those stories of particular interest to videotex users.

The conference room is impossibly small for the task. Background noises include bursts of static, reminding the New York editors that their colleagues



AP

AP Viewdata editor Cindy Cannoll: "You're never at the end of the race."

in Washington and Chicago are attending by telephone conference call. AP Managing Editor Wick Temple presides. One-by-one, the editors representing national, international, sports, business and other types of news review their agenda. Occasionally a disembodied voice from Washington or Chicago reports or asks a question. Standing in the corner, Canoll takes notes. ("I rarely say anything," she says later. "Sometimes they ask me a question about computers or videotex. . .Sometimes I know the answer." The conference breaks up and Canoll goes back to the cubicle to rejoin Chris Dacey.

Dacey was transferred from AP's sports desk to Viewdata. In Canoll's absence he hasn't missed a beat: reading the stories from DataStream, transferring the best to the videotex wire, editing and sending them. His fingers fly over the terminal keyboard as his eyes scan the stories for changes.

Meanwhile, Canoll turns to the cubicle's third terminal, a Delta 7300, connects the modem and dials up one of Viewdata's prime users, CompuServe. She punches in "GO APV" and begins to monitor how the news sent from the Atex terminals has been received. "Uh, oh, Chris," she says presently, "the 11 (a.m.) report isn't there. . .Better resend it."

The menu headings, or headlines, that draw readers into the stories are a constant source of concern for Viewdata's editors. With only one line of 32 characters available to highlight each story, they must use short, descriptive but arresting verbiage. Recognizing the international audience, they try to include place designations and only generally understood abbreviations. AP is cautious about using attributions, so a part of the precious 32 characters is often taken up by ". . . says" rather than a straight factual statement.

"At first we tried to keep the stories to around 200 words," Canoll recalls. "But now we let them run if the material appears to warrant it. . . Some customers appear to want shorter stories, some longer. We try to take it on a story-by-story basis."

The race with the news continues throughout the afternoon and into the evening. The worst time for Viewdata's editors is between 5 and 6 p.m. when the stock market closes and the last quotations and analyses need to be put on rapidly. "It was even worse when Carter was President," Canoll recalls. "It seemed as if he held all his press conferences about that same time. Reagan seems to spread them out a little more."

The pace of the Viewdata wire seems exhausting, "but we learn to pace ourselves," Canoll notes. "And besides that, we're excited about what we're doing." All four Viewdata editors are young, under 35. They come from a variety of backgrounds, including newspaper work, the Peace Corps and a university creative writing program. Canoll is a graduate of Colby College (Maine) in sociology; she later did work in theatre administration. She joined AP a little more than a year before joining the Viewdata desk in 1981.

"When I sat behind the Viewdata terminal for the first time, it was my first time behind any terminal. . .I guess that thrill of learning a new medium while dealing with the latest news; that's a big part of the excitement."

Even if that means getting to work at 4:30 in the morning.

— B.S.

EUROPEANS EMBRACE VIDEOTEX

"Old World" Publishers Stay a Step Ahead of the Yanks

By G. Berton Latamore

For the last two-and-a-half years the most popular section of Britain's Prestel World Service has been the videotex newspaper, *Viewtel 202*. Another electronic newspaper, the *Journal Electronique Francaise* (JEF), was the most used service in the 18-month-long T3V videotex trial conducted by the French government agency Intelmatique in three Paris suburbs. Knight-Ridder of Miami and Times-Mirror of Los Angeles are both courting newspapers as local partners for home videotex systems they hope to establish in major U.S. cities.

Virtually every public videotex system worldwide carries an electronic newspaper, usually published by the owners of the dominant newspaper in the area. CompuServe, for instance, has an electronic version of *The Washington Post*. Furthermore, newspapers ranging in size from the *Californian* in Bakersfield, Calif., to the Tiffin, Ohio, *Advertiser-Tribune* are marketing services of their own.

Newspapers are playing an active and, in some cases, vital role in the development of videotex, and their success in the computer-communications medium already seems assured. Ironically, videotex newspapers are developing just as the newspaper industry faces one of the greatest crises in its history. Last summer three large U.S. papers and two major Canadian dailies folded, the latest in a trend that started a decade ago. Several more seem near collapse. Even the venerable *Times* of London has been teetering on the brink of bankruptcy for several years. While nearly all the endangered papers are urban afternoon dailies, and while many morning dailies are doing very well, those that fail are not replaced. New York City, which once had five respected newspapers, now has the *New York Times* and two tabloids. Washington, D.C., the most newsworthy spot in the United States, is a one-newspaper town. Hartford, Conn., has had no afternoon paper at all since the Gannett-owned *Hartford Times* folded in 1975.

One of the major reasons for this long-term trend and possibly a reason so many newspapers and newspaper chains are interested in videotex, is the escalating cost of newspaper production and distribution. Videotex seems to offer a solution to the problem by eliminating the need to actually print the paper. It also makes subscribing easier: The user may join the videotex system to get other services, including home banking and shopping, and receives the newspaper as another service.

At this stage in their development, electronic newspapers are being published as an extra outlet for information gathered primarily for the regular paper. Even the financially-successful *Viewtel 202*, the oldest electronic journal, is published by the same company that owns the Birmingham, England, *Post and Mail* and is looked on as a sister publication rather than as a competitor. *Dow Jones Electronic News* has a full newsroom, but its personnel rewrites stories to meet the requirement of videotex, depending on such sources as *The Wall Street Journal* and the *Dow Jones Business News Wire* for all news coverage.

As more newspapers start videotex publication and the economy continues to put severe pressure on traditional publishing operations, it seems inevitable that some papers will eventually become totally videotex publications. In fact, Daniel Lee Smigrod, a spokesman for *Viewtron*, Knight-Ridder's videotex subsidiary, says they expect this to start happening early in the 21st century. He claims that one reason Knight-Ridder, one of the world's largest newspaper chains, has made a major commitment to videotex to the extent of developing a full system for general home use, is, "We want to be sure we're replacing ourselves and not being replaced by someone else."

Things to come

It is, therefore, probable that today's videotex publication trials will define the nature of one of tomorrow's most important information sources. In tomorrow's society, which many pundits predict will be "post industrial" and "information based," electronic newspapers may have immense impact. They may, in fact, be the only source of in-depth reports on significant daily events in many large urban areas by the year 2100.

The electronic newspaper will differ

from the printed paper in significant ways that reflect the differences between the two publishing media. The best illustration of these electronic information utilities of the future are provided by *Viewtel 202* and *JEF*.

The developers of these services have identified three keys to success. The first is the ability to report news as it is happening. "The frequency of updating was a major element in the success of *JEF* because the public won't stand it if a section is not up-to-date to the minute," says Jean-Claude Gayet, director of marketing for *JEF*. "The public is very hard to please on that particular point. The frequency of updating will be the winning card for the electronic journals to come."

Frederick Madiera of Torch Computer in Boston, the U.S. representative for Prestel, says one of the keys to *Viewtel 202*'s success is the instant updating ability. He said he happened to visit their offices on the day the British government set its annual budget. *Viewtel*'s editors were taking reports of the debates and votes off the news wire and putting them into *Viewtel* within minutes of the actual events. They provided reports to their readers before the radio or television and with much of the detail of the printed paper. *Viewtel* was heavily used that day, Madiera said.

Capsule news

Videotex also demands a different news format than the newspaper, judging from the experience of the two European journals. "The main difference between *JEF* and the daily papers was a question of written expression," Gayet says. "You can't write on a TV screen what you can on a newspaper page. The medium requires development of a new kind of writing: videotex language. The message must be short and the writing style should be short, too."

Both journals present their stories in capsule form. However, they use the database management capabilities of their systems to back these up with a great deal of background for those who want it.

Full services

The third key is making the services as complete as possible.

"The why to electronic media is you can put everything in and get out what you want at any moment," Pat Montague, director of *Viewtel 202*, says.

Accordingly, both services went far beyond the news, weather and sports equation of the newspaper to offer the widest possible variety of information services. Among these were public transportation schedules, detective novels, reviews of everything from restaurants to pop music, and games.

Viewtel 202 also offers special sections of interest to particular segments of Prestel's business public, such as travel or real estate professionals. These sections, Montague says, are designed to attract users to the service so they can be exposed to the rest of its offerings and, hopefully, become steady readers.

Other differences

Electronic newspapers differ from their sisters in other ways as well. They can use the interactive nature of videotex for games, on-line ordering of advertised merchandise, and reader opinion polls. So far, however, only computer games have actually been tried out in these publications.

Advertising is very important to *Viewtel 202*. It is totally supported by advertising and does not charge its readers at all. *JEF*, a subsidized experiment, did not carry advertising, but Gayet sees it as an important revenue source for the commerical journals just appearing on the new French videotex systems.

Like the news, however, the advertising must take a new form to fit the new medium. "It seems evident that advertising in an electronic newspaper must differ from advertising in a regular paper," Gayet says. "In the regular paper ads are imposed on the reader, while in the electronic journal the reader must order their page numbers to get them. Thus, the ad must be different in its contents. It has to be essentially informative."

Graphics

Gayet sees graphics as very important to electronic journalism. In fact, of *JEF*'s permanent staff of 21 persons, four were graphic artists. "From the beginning we deliberately chose to use all the capacities of videotex graphics," he says. "Graphics were essential; they were part of *JEF*'s 'image de marque.' It is necessary to create something on a TV screen that will be agreeable to look at and to read. The graphics add an element of relaxation."

Intelmatique Managing Director Roy D. Bright checks into T3V service: Can more than one electronic newspaper survive on a single national system?

Both Prestel and T3V use alpha-mosaic graphic systems. These form low-resolution graphics by lighting and coloring small squares on the screen. Although popular in Europe, this system has been criticized in the United States for the low quality of its images, particularly in advertising usage. The trend in North America seems to be for medium-resolution alpha-geometric graphics which require much more expensive hardware. The quality of the alpha-mosaic graphics, however, doesn't seem to have hurt the advertising sales at *Viewtel 202*, which has been profitable for more than a year.

"People here don't know any better, so they accept the graphics,"

Montague said. "Alpha-geometrics would be beautiful, but the cost of a receiver is too high. The graphics in a printed newspaper are primitive, but they sell an enormous quantity of goods. Alpha-mosaic graphics won't keep the advertiser out of the market."

Who pays?

The income structure of the electronic newspaper is vital to its success. The traditional newspaper gets the bulk of its income from advertising, with the circulation department supporting itself. Gayet advocates a similar split for the electronic press partly from concern over the effect of a free electronic newspaper on printed competition.

On the other hand, people are used to free entertainment on television, and some industry analysts predict they will refuse to pay even a small charge for using specific pages on a system. While such charges are common in videotex today, it is also true that so far no videotex system has successfully penetrated the mass home market represented by the available television screens already in homes. *Viewtel* is certainly demonstrating that free service is economically possible.

Beyond homogeneity

One of the most interesting results of the *JEF* experiment is the segmented user profile of the various items offered on the journal. Intelmatique chose the user base for T3V carefully to include a representative population of each economic class of urban France. As a result, *JEF* has been able to trace the relative popularity of its various offerings according to economic class. It recently released a detailed study of the results.

Seven categories of user families were identified according to the profession of the head of the household. These were industrialists and professionals, senior executives, middle level executives, traders and artisans, white collar workers, manual workers, and retired persons. While some news services such as stock market reports might be expected to interest only some of these groups, the real surprise was that each group developed a unique pattern of use. These findings, particularly the differences between upper and middle management, indicate that while the electronic newspaper appears to be a mass medium similar to television, its audience is actually made up of many individuals, each using the medium's flexibility to customize the newspaper to his personal needs.

Industrialists and professionals had one of the lowest usage rates on *JEF*, 4.33 percent of total usage, even though they made up seven percent of

the T3V trial population. During the early months of T3V, they generally played the games. After the first few weeks, use dropped off rapidly, however. When they did access *JEF*, they usually used its reference material.

JEF's analysts blame the low response on lack of specific services aimed at this group. Noting that this group is not greatly interested in political life and that *JEF*'s economic, social and political services lacked the weight to attract them, the analysts suggested they would have responded better to specialized semi-professional information. *JEF* lacked the staff to supply this.

Although, senior executives only made up 37.5 percent of T3V's sample population, it logged 44.56 percent of *JEF* usage. Hard news, race reports, political backgrounds, and television and radio schedules were their main interests. These were all regularly updated services. The group was not attracted to games.

Middle ranking executives had a completely different use profile. This group, which made up 21.5 percent of the T3V sample population, was responsible for 22.15 percent of *JEF* demand. While senior executives were interested primarily in breaking news stories, however, middle-ranking executives solved puzzles, played games, and read the weekly news summaries and political backgrounds. While senior executives tended to make frequent short calls to *JEF* to see new updates, mid-level executives made fewer, longer calls that gave them the opportunity to solve the puzzles and read the dense texts that interested them.

Traders and Artisans made up 6.54 percent of the T3V sample population and accounted for 4.65 percent of *JEF* usage. They were basically game players and used practical information such as race and lottery results and television schedules. They liked both the standard and Chinese horoscopes. They made little use of either the news or such encyclopedic services as the political database with its complete collection of capsule biographies of French ministers and members of Parliament.

White collar workers made up 10 percent of T3V's population, but provided between 11 and 12 percent of *JEF* usage. They liked games, particularly puzzles. They also used general information texts including health, consumer and political information.

Finally retirees, like professionals, were not attracted to *JEF*. Although they made up 9.5 percent of the test group, they were responsible for only 3.52 percent of *JEF* demand. When they did use *JEF*, their interest was mainly in hard news and general information in such areas as cooking and health. Since the test population was made up of volunteers specifically interested in trying videotex, the low usage cannot be attributed to resistance or inability to adapt to the new medium. As with the professional category, the reason for the low usage undoubtedly was *JEF*'s failure to offer services that interested the group.

A French on-line magazine: The medium requires a new kind of writing.

No charge

The *JEF* experiment was incomplete in one important respect: T3V was free. Any commercial videotex service would have to charge users in some way. While *Viewtel 202* does not carry any per page charges, for instance, all Prestel subscribers must pay basic subscription and usage charges to Prestel.

The amount and nature of the commercial charges will have an effect on usage of a commerical journal. Prestel, for instance, is basically a business service largely because the cost is too high for home users. A flat subscription fee would tend to prevent persons with lower incomes from joining at all, while charges based on time spent on the system would affect long calls. However, the two main user groups — upper and middle management — probably wouldn't be greatly affected because of their higher incomes.

Competition

Can more than one electronic newspaper survive on a single national system? This is a concern of Gayet and the French press in general as France moves rapidly towards a national network. "It is our hope that several can survive," says Gayet. "We have to fight for the pluralism and for the coexistence of all the newspapers. In France, the newspapers are very much politically aimed, and because of this they attract different readerships. Each has to be present on the network to give the user the opportunity to choose. This choice is essential."

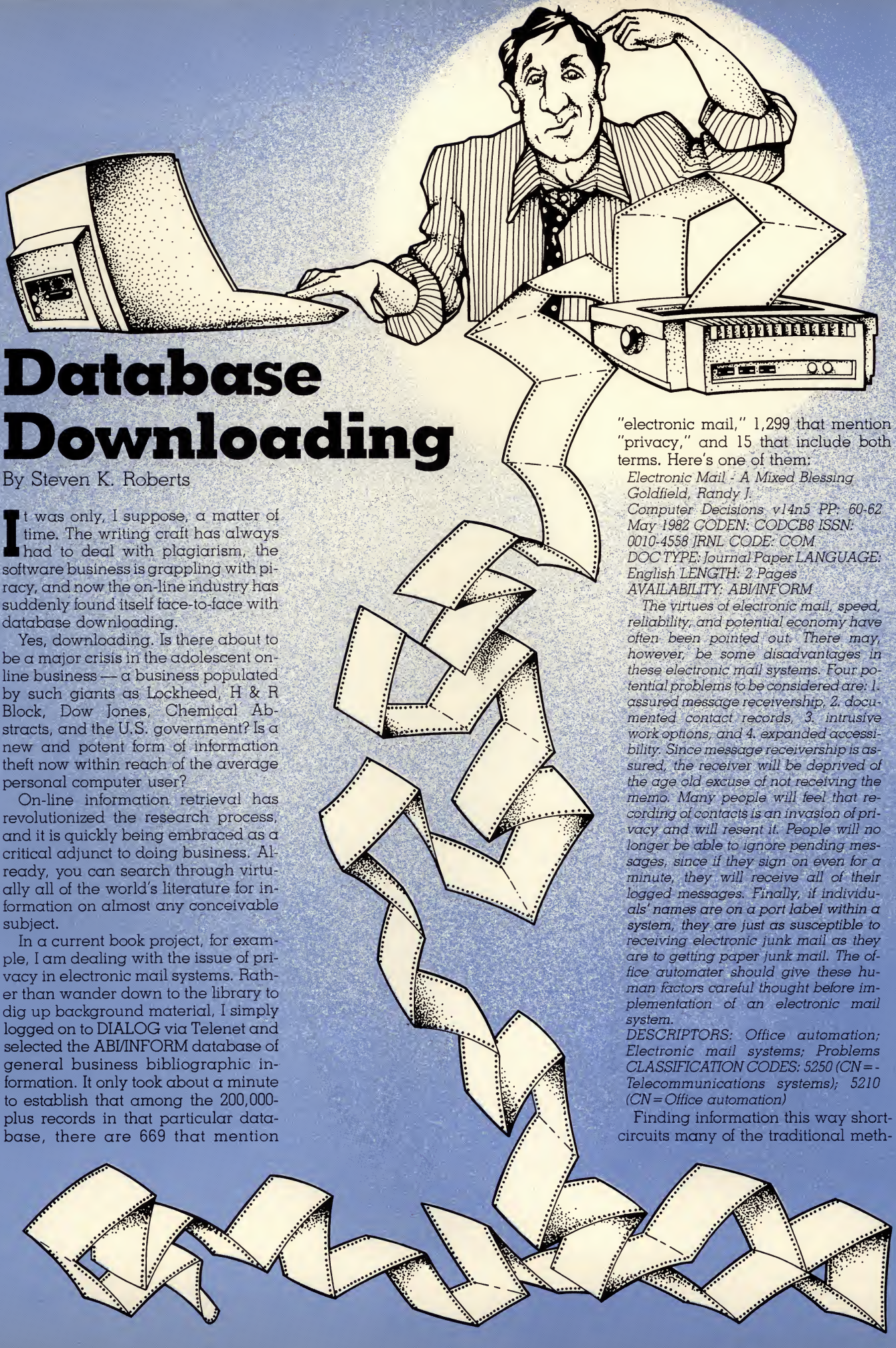
Prestel's experience would seem to discourage any hope of competition among videotex newspapers. So far *Viewtel 202* is the only electronic paper to survive. Other newspaper publishers have tried to gain a foothold but found they were unable to compete with *Viewtel*. Those that remained on Prestel turned to offering different kinds of services and abandoned electronic journalism altogether.

Prestel, however, has not yet attained a large audience in terms of the total British population. The audience it does have is predominantly among businesses. Only this year has it finally started attracting a following among the growing number of home microcomputer users in Britain. As its home audience grows, the service may be able to support more than one news service.

Today, several French newspapers are beginning to publish electronic editions on the new regional services Intelmatique is establishing throughout the country. *JEF* has ceased activity and its place on T3V has been taken by an electronic journal published by Le Parisien Libere.

JEF, Gayet says, fulfilled its objectives. "*JEF* showed that the press definitely has a role to play in videotex," he said. "It created a new language for clear expression on this medium. It helped establish a definition of success. It developed methods to handle the difficulty of keeping the database current. Finally, it was a valuable experience in itself. For the first time, the entire French fourth estate has joined in a common undertaking."

G. Berton Latamore is a free-lance writer from Providence, R.I.



Database Downloading

By Steven K. Roberts

It was only, I suppose, a matter of time. The writing craft has always had to deal with plagiarism, the software business is grappling with piracy, and now the on-line industry has suddenly found itself face-to-face with database downloading.

Yes, downloading. Is there about to be a major crisis in the adolescent on-line business — a business populated by such giants as Lockheed, H & R Block, Dow Jones, Chemical Abstracts, and the U.S. government? Is a new and potent form of information theft now within reach of the average personal computer user?

On-line information retrieval has revolutionized the research process, and it is quickly being embraced as a critical adjunct to doing business. Already, you can search through virtually all of the world's literature for information on almost any conceivable subject.

In a current book project, for example, I am dealing with the issue of privacy in electronic mail systems. Rather than wander down to the library to dig up background material, I simply logged on to DIALOG via Telenet and selected the ABI/INFORM database of general business bibliographic information. It only took about a minute to establish that among the 200,000-plus records in that particular database, there are 669 that mention "electronic mail," 1,299 that mention "privacy," and 15 that include both terms. Here's one of them:

Electronic Mail - A Mixed Blessing
Goldfield, Randy J.
Computer Decisions v14n5 PP: 60-62 May 1982 CODEN: CODCB8 ISSN: 0010-4558 IRNL CODE: COM
DOC TYPE: Journal Paper LANGUAGE: English LENGTH: 2 Pages
AVAILABILITY: ABI/INFORM

The virtues of electronic mail, speed, reliability, and potential economy have often been pointed out. There may, however, be some disadvantages in these electronic mail systems. Four potential problems to be considered are: 1. assured message receivership, 2. documented contact records, 3. intrusive work options, and 4. expanded accessibility. Since message receivership is assured, the receiver will be deprived of the age old excuse of not receiving the memo. Many people will feel that recording of contacts is an invasion of privacy and will resent it. People will no longer be able to ignore pending messages, since if they sign on even for a minute, they will receive all of their logged messages. Finally, if individuals' names are on a port label within a system, they are just as susceptible to receiving electronic junk mail as they are to getting paper junk mail. The office automater should give these human factors careful thought before implementation of an electronic mail system.

DESCRIPTORS: Office automation; Electronic mail systems; Problems
CLASSIFICATION CODES: 5250 (CN = Telecommunications systems); 5210 (CN = Office automation)

Finding information this way short-circuits many of the traditional meth-

ods of doing research, be it for book-writing or for keeping an eye on your company's competitors. You can now readily access databases of all sorts of things, including:

•All 4,800 yellow pages directories in the United States
•U.S. patents since 1970
•The complete text of Commerce Business Daily
•Detailed financial information on public companies
•Chemical structures
•The Congressional Record
•The National Library of Medicine

and more — not to mention bibliographic references and abstracts corresponding to roughly 95 percent of all literature published in the last 10 years.

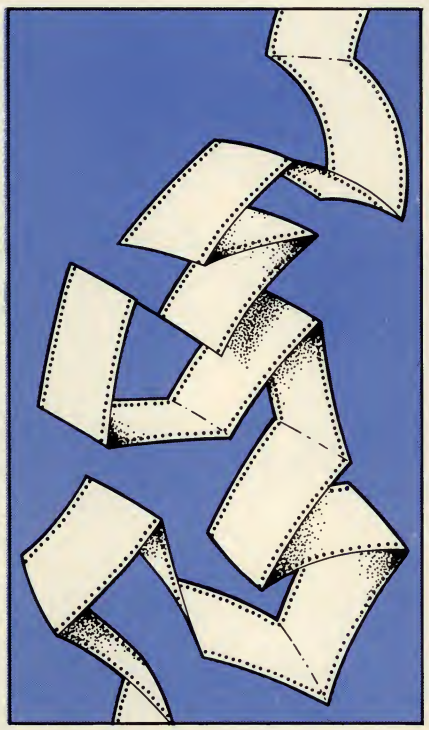
Great. But there are problems. Complex information resources tend to make complex demands on those who use them, from having to learn alien command protocols to trying to find ways to hold down the high cost of system use. (At a dollar a minute and up, on-line databases don't lend themselves well to casual browsing.) Besides, there are a lot of interesting things that people would rather do with the retrieved information than print it on terminal paper or watch it scroll by on the screen — although those have traditionally been the only options.

'Intelligent' terminals

There are thus a number of motivating factors that have encouraged the development of "intelligent" database terminals. It has become somewhat passe to sit down with a TI Silent 700 terminal and perform database work; the stylish searcher is now armed with a microcomputer and sophisticated communications software.

There is more rationale for this than mere high-tech panache. Consider the possibilities . . .

•Some reasonably straightforward software can enable a personal computer user to capture an on-line session on disk for later printing — or for inclusion in a word-processed text file, such as this one (with its "electronic mail" abstract about 4,000 characters back).
•Adding a few features to the above allows the system to play an active role in the on-line searching process, at the very least providing automatic log on and rapid transmission of a prepared sequence of commands. Since connect-time charges apply to the time spent banging on the keyboard, this can translate into significant cost savings.
•With even more sophisticated software, the user can save a search on disk, and then process it to eliminate duplicate references from different databases, plot statistical data, load econometric information into a spreadsheet system, and so on.
•Finally, a subset of the remote data-



base can be downloaded and used to create a local database that can then be searched at no additional cost. This is surprisingly easy — and it raises a host of fascinating legal and copyright questions.

Consider a real application. Suppose you are engaged in the artificial intelligence business — one of the "cutting edge" technologies of the '80s. Perhaps your products are expert systems geared to various professional markets.

Now, AI is a fast-moving, complex field that is just beginning to overflow academia and become a viable industry in its own right. As such, there is a lot of literature being generated, but there is really no place to go for an ongoing up-to-date overview of what's going on. How would you keep up with the activities of your colleagues around the globe?

No problem. Nearly all significant published literature in the field can be found in the "sci-tech" bibliographic databases (INSPEC, COMPENDEX, NTIS, and SCISEARCH, in particular). All you have to do is sign on every now and then and see what's new.

Well, it's not quite that easy. At this writing, those four databases contain a total of 4,741 "hits" on artificial intelligence or knowledge engineering, and while there is inevitably some overlap, that's still a lot of data. More appears every month. There are searching tricks that let you get just the latest information, or to reduce that 4,741 to a manageable number by "anding" the items with another term, but still it's a lot of data.

But you have this personal computer, see, and this piece of database management software called, perhaps, dBase II. It occurs to you one day that all you have to do is perform one big, expensive search, download it, make your own database, and thereafter just update it now and then with the latest additions to the files. You could then search through those article abstracts to your heart's content, finding "semantic networks" today and "predicate calculus" tomorrow — all at no extra charge.

Colorful. Illegal, of couse, but colorful — and quite easy, as long as the numbers don't get too big. Naturally, the database vendors aren't particularly pleased about this, because by doing it, you rob them of revenue and violate an implied copyright agreement that you "sign" everytime you access their files.

And therein lies the problem. On one hand, we have an information resource of unprecedented scope along with the tools to use it in interesting ways; on the other hand, we have copyright laws, along with vendors who get annoyed when people steal their information.

What's to be done?

Planning for the inevitable:

Database producers and vendors are grappling with the problem right now. At the 1983 National Online Meeting in New York City, there was a well-attended half-day session on the subject, with representatives of the major industry protagonists vigorous-

Database downloading is on the rise. There are no real objections to the more "basic" forms of the practice, but there is considerable concern about the implied ability to research the data.

ly exchanging ideas.

There was one matter on which everybody seemed to agree: Database downloading is on the rise. There are no real objections to the more "basic" forms of the practice — storing the results of a search for subsequent reformatting, for example — but there is considerable concern about the implied ability to re-search the data. At the individual user level, the problem is bad enough, but it is equally easy for you or me to download the bulk of an expensive database, massage it slightly to camouflage its source, and then market it as our own product (at a lower price, of course). This could put the original database out of business.

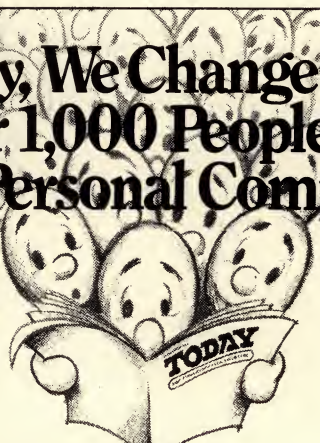
Since there is no way for an on-line vendor to know exactly what is happening to the information that is being sent to a user's terminal, this practice is exceedingly difficult to detect. One might be suspicious of large, general searches, but a clever downloader could easily steal an entire database by breaking it up into subcategories.

This inevitably raises the issue of database pricing. Since there is no practical defense against downloading, it follows that the vendors will have to price their products in a way that covers them against their anticipated losses.

The costs of on-line services are already in a state of flux for other reasons. The widespread use of both 300 and 1200 baud terminals renders a straight connect-time charge (still most common) quite unfair to owners of the slower machines. No scheme that includes a 1200 baud surcharge has been very well accepted by users, so the result is a gradual trend toward the sale of individual data items, rather than on-line time. This, presumably, ends up being added to a flat connect-time charge to prevent people from tying up the system's network ports all day just to eliminate the hassle of signing on.

This is a start, but it still doesn't protect vendors against the downloading of databases for subsequent re-use. Some have considered embedding "garbage" characters into records, presumably to confuse microsystems, but this is silly and easily bypassed. Others have simply decided to raise all the prices and not worry about it, and still others are planning the creation of special "downloadable" formats that cost more, but lend themselves so well to subsequent manipulation that would-be downloaders will be willing to pay the difference. The problem here, of course, is

Every Day, We Change the Way Another 1,000 People Think About Personal Computers.



That's a thousand new people who learn how videotex affects their everyday lives.

And with that kind of growing interest, TODAY is doing much more than adding readers. It's leading the Videotex/Computer market. It's issues oriented and examines how videotex affects the way we live, work and play.

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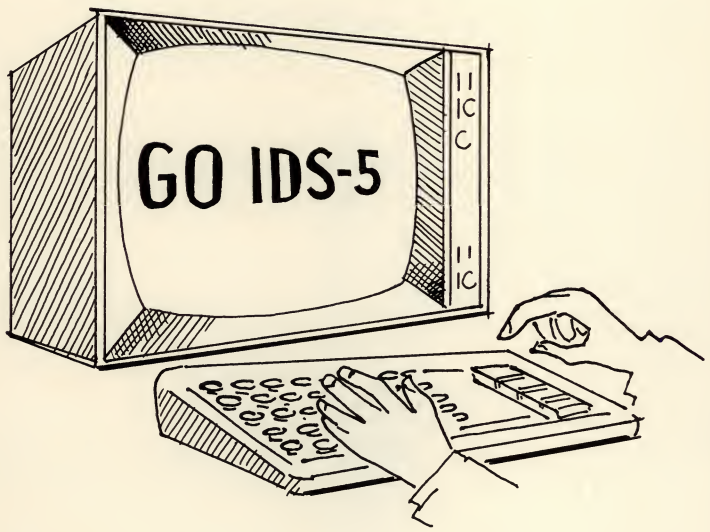
If you are a CompuServe subscriber, you now have access to financial planning help from IDS. We have information concerning essential money management ideas, including: the family budget, mutual funds, employee benefits and understanding insurance.



By entering GO IDS-5 you may also request our free 24-page booklet: "Financial Planning—How it works for you". This booklet demonstrates by case study, several examples of people in different situations planning their financial future. We think you'll find it helpful.

IDS® IDEAS TO HELP YOU MANAGE MONEY

that the standard formats are not particularly difficult to process. (One excellent commercial machine, the Cuadra STAR, inhales records for a service such as SDC's ORBIT and converts them into its own database format within seconds. Their booth at the National Online Meeting was one of the best-attended of the show.)

The on-line industry is not alone in its struggle with this problem. Wherever the commodity is information, theft can easily take place without detection. Witness the battles being fought over software piracy and videotape copying. Even the set of recumbent bicycle plans I just purchased bore a futile warning on the cover that nobody but the purchaser could use them without mailing in a $10 royalty fee.

One thing that database producers can do to minimize the severity of the problem is to deliberately make their information available for use on local systems. BIOSIS, for example, is the premier life sciences databases, offering over four-million records covering some 9,000 journals and other information sources since 1969. Having a large research clientele, they have begun marketing subsets of their database on floppy disks, calling them BITS (which, of course, was immediately labeled "BIOSIS in Tiny Segments" by the users). Their approach is to make BITS so convenient and efficient that there will be very little motivation for people to copy the data illegally on line.

This seems to be the key. Eliminating the illegal flavor of database downloading through one means or another can have the effect of actually adding to a producer's revenues. It will be interesting, over the next few years, to see how the industry deals with the continuing increase in the information-processing capability of its users.

Doing it yourself

By now, you are probably straining at the bit, so to speak, anxious to try out this new form of information manipulation — especially now that the major on-line vendors have made low-cost databases available in the evenings (DIALOG'S "Knowledge Index" and Bibliographic Retrieval Service's "BRS After Dark").

The first point we should make is that you can download anything, but subsequent use of it takes some doing. If the application is simple reformatting or word-processing, you can accomplish it quite simply with a standard micro and any of the 50 or so communications software packages that are now available. You can even do it with no special software at all, if you are willing to operate a bit clumsily — CP/M's PIP utility, for example, can do the job quite neatly as long as the files don't get too large.

But beyond that, you are looking at database software — or perhaps a special-purpose program to manipulate downloaded data from a service such as CompuServe's MicroQuote.

The operation of one commercial machine will serve to illustrate the downloading procedure. The Cuadra Associates' STAR system is marketed primarily for end-user database creation and management, and as such, offers a number of interesting capabilities for data entry and retrieval.

It is also quite adept at downloading, though that is not mentioned in the company's eight-page brochure (there is only a coy reference to "data obtained from external sources"). A company spokesperson, in fact, stated that downloading capability is only

sold to users who have permission from on-line vendors to take advantage of it, such as those with private files or contractual arrangements with a database producer. Of course, there is no way to monitor their subsequent activities . . .

Once you acquire downloading capability on the STAR, the procedure is quite straightforward:

First, you go through a quick "database definition" session, wherein you establish the correlation between data fields in the incoming material and those that will later be used for local searching. For example, the SDC ORBIT database system uniformly tags all article titles with the "TI" prefix. When setting the STAR up for downloading, you can identify this as the "Title" field and define its various characteristics for subsequent processing.

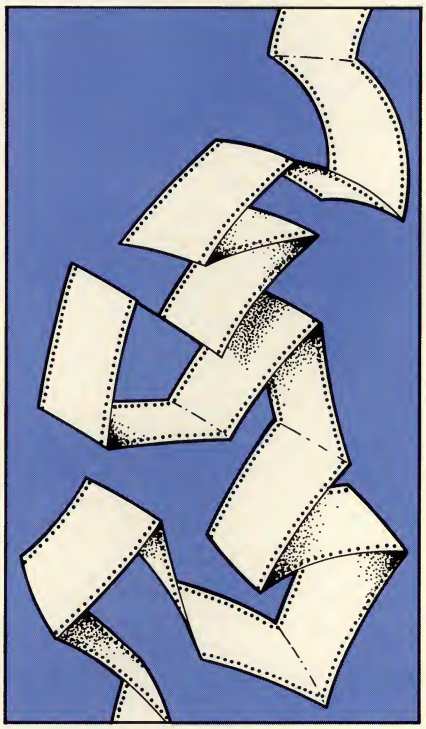
Once all that is done, you call the commercial database service just like you would any other time (dial the number, enter your password, etc.), and then issue a "TALKTO" command that makes the STAR system act like a dumb terminal — as far as the other system is concerned, anyway. At that point, you perform the on-line search as usual (all articles mentioning "artificial intelligence," for example), hitting a CTRL-P to begin recording as soon as the information starts to flow.

Now you can wander out for a cup of coffee. The STAR is downloading the data and storing it on disk. When all the applicable records have arrived, you stop the local recording with another CTRL-P and sign off the expensive remote system.

At this point, you possess the data in re-usable form. You can examine it with a .VIEW command, perform a FORMAT to clean it up and make it compatible with your local software, and execute a function called STARLOAD that integrates it into the local database. Finally, you fire up the STAR database software itself and perform an INDEX operation that produces the "inverted index" — the key to subsequent searching.

You now have a fully-searchable in-house replica of the database subset that you defined — and paid for once — on the dollar-a-minute system. The material can be accessed as flexibly as you like: "Find all articles mentioning both fifth generation and Japan that were written in English during or after 1982." No problem. The system supports all those great features that information junkies have grown to love — truncation, set manipulation, sorting, flexible formatting — in short, a STAR user has a true in-house on-line information retrieval system.

Of course, this capability doesn't come cheap. The STAR is based on a hard-disk Alpha Micro System, and in the minimum 8.5 megabyte configuration costs about $30,000. The price tag goes up to $50,000 for the 120 megabyte version. Similar functions can be



performed with small machines, however, provided you have the software available to accomplish the basic steps described above.

But the economics of system ownership, the cost of on-line time, and the ongoing expense of keeping the local database updated give rise to a break-even point that might be a bit high for casual use. One participant in the National Online Meeting session on downloading commented that a $30,000 system costs about $7-10,000 a year to own and operate — equivalent to about 10 hours a month of on-line time. Even though the local system can be available 240 to 360 hours a month as a custom-tailored electronic library, it would have to actually be used quite heavily to offset the operating costs.

Of course, there are a lot of people who would do so quite happily, including those with suspicious commercial motives.

Cuadra Associates is very careful to avoid mentioning downloading in their advertising, being well-aware of the fact that there are forces out there that are trying to hold Sony liable for manufacturing machines capable of copying video programs. They don't want to be caught in the same legal quagmire — although it doesn't take much technical sophistication to realize that any microcomputer with a modem and some communication software can do a perfectly adequate job of downloading an expensive database. They may be a bit clumsier than the STAR, but many of the database packages marketed for micros will perform the subsequent manipulation quite adequately. They all have one limitation or another (dBase II, for example, is limited to 1,024-character records even though many on-line records are twice that). But it can be done.

And it is being done — on an increasing scale. The challenge is now before the database industry:

"What are you going to do about it?"

Steven K. Roberts is the president of Words'worth, Inc., a high-technology business communications firm in Columbus. He is currently working on his fourth book.

"WHICH ONE OF YOU GENTLEMEN THINKS HE'S A COMPUTER?"

ZIP-COMM: Zipping Zardax into Networking

Reviewed by Ernest E. Mau

Have you ever wondered what it would be like to tie a word processor directly to a computer network? Not the usual arrangement that bounces back and forth between two programs, but an integrated package providing both word processing and network communications with just a few fast keystrokes.

That combination can be a reality for Apple II and IIe owners using the Zardax word processing system (reviewed in the April issue of TODAY). Action-Research Northwest, the U.S. agent for the Australian-developed Zardax package, now supplies enhancement software called *Zip-Comm*. Written by Dr. Charles M. Stillman, the *Zip-Comm* utility modifies Zardax to provide basic functions for communicating with other computers over telephone lines.

Part of the philosophy behind Zardax has been easy updating. For each new revision, a licensed user obtains a copy of a utility diskette from a dealer and executes a one-time set-up procedure. In keeping with this, *Zip-Comm* is purchased as a utility diskette and is executed as a new set up. Once done, the Zardax program is changed, and new options are added to the "inner menu" that controls printing and other functions. From then on, switching between editing and communications is simply a matter of accessing the inner menu and keying appropriate commands.

Unlike most communications software, *Zip-Comm* is not specific to one modem. It can operate at either 300 or 1200 baud through either a serial interface or a stand-alone plug-in modem card. For example, it drives the Hayes Micromodem or Novation Apple-Cat II directly, although the Apple-Cat must be equipped with Novation's optional firmware. Furthermore, modems such as the Hayes Smartmodem 300 or Smartmodem 1200 can be connected to virtually any serial interface board including Apple's Communication Card or Super Serial card, SSM's AIO card, CCS' 7710A serial card, and others. There's an installation option to accommodate interfaces not on the standard menu. Thus, modems and interface cards can be changed without sacrificing software or altering operating procedures.

Since *Zip-Comm* installation is done in addition to normal setup from a utility diskette, Zardax continues to support 40- or 80-column display, a large number of 80-column boards, and many different printers.

However, there is a sacrifice. Without *Zip-Comm*, Zardax supports the functional keyboard modifications of a Videx Enhancer II. With *Zip-Comm*, the enhancer must be "locked out" during setup to prevent interference with communications functions. That means a special two-wire keyboard modification must be installed to use *Zip-Comm*, and the benefits of type-ahead buffering and other keyboard enhancements are lost. The easy way around this is to set up one Zardax diskette without *Zip-Comm* but using the enhancer and the other diskette with *Zip-Comm* overriding the enhancer. That way, the best of both worlds are available just by changing diskettes and rebooting.

To test the *Zip-Comm* package, an Apple II Plus was equipped with an extra 16K memory board for a total 64K of RAM. This isn't necessary for *Zip-Comm* operation, but it does allow larger text files to be created and edited by Zardax and thus allows longer uninterrupted transmission to or reception from a network. An ALS Smarterm and a Videx Videoterm were swapped in and out of the system to provide 80-column displays. A Hayes Smartmodem 300 then was connected to a CCS 7710A Asynchronous Serial Interface preset to 300 baud and installed in expansion slot 2. A separate printer interface remained in expansion slot 1, allowing printing and networking without having to change card assignments.

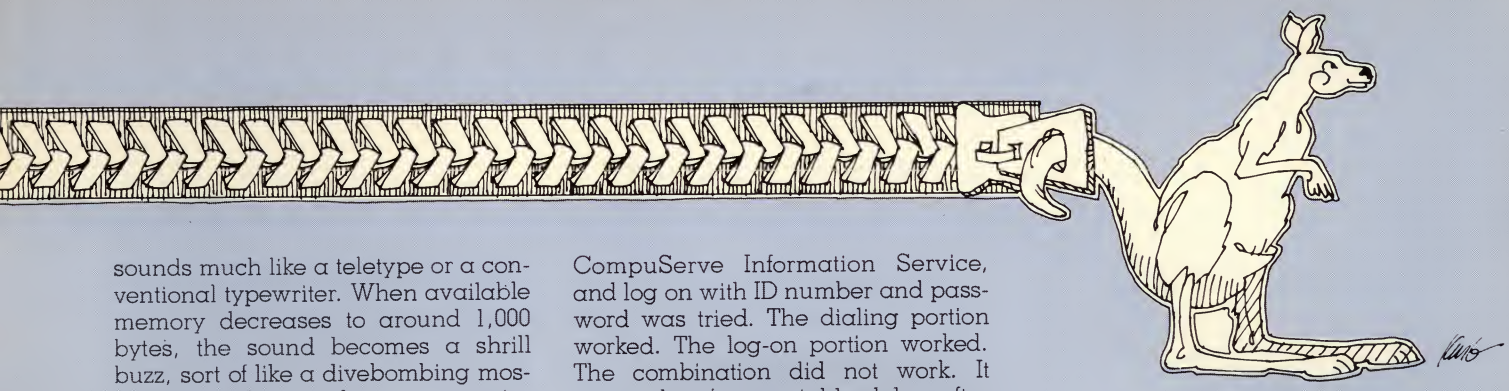
Initial setup took under half an hour, most of which was spent installing the special two-wire shift-key modification supplied with the original Zardax package. Once done, performing a new set up to override an existing Enhancer II in the system and activate *Zip-Comm* functions took less than five minutes. Except for the minor difficulty of installing the solderless shift-key modification, the whole procedure was accomplished with no trouble.

Suddenly, the processor's inner menu had three new functions, namely an "OT" command to activate a terminal mode for communications, an "OM" command to reroute outputs to the modem instead of the printer, and an "OP" command to restore output to the printer. The "OM" command actually deceives Zardax into "thinking" it's sending to the printer interface when it's really sending to the modem interface. From the terminal mode, several sub-commands are implemented by pressing the shift and control keys, including commands to send a "break" signal to the connected computer, receive data from the network into a Zardax file, change the operation of a backspace, change from full- to half-duplex, and so on.

It's an extremely simple system to use. To illustrate, consider a letter containing several pages of text. The Zardax word processor is used to prepare and edit that letter normally, saving the finished version to disk for permanent record. Saving the letter leaves it in memory for further editing or transmission to the network. Networking begins by going to the inner menu, typing "OM" to reroute outputs to the modem instead of the printer, and typing "OT" to enter the terminal mode. With a Smartmodem, dialing and logging on are easily handled with commands issued to the modem from the keyboard, so once the network destination is accessed, all that's left is to hit a SHIFT/ESC to return to the inner menu and choose the output option desired. The file then is transmitted automatically.

To receive a file from the network, memory can be cleared and a SHIFT/CTRL-R issued while in terminal mode. Incoming data is stored in memory where it becomes a text file like any other Zardax file. Without leaving the program, that file can be saved, edited, formatted, or even retransmitted back to the network. Multiple files can be received in succession, making one larger file for editing, if that seems desirable. When done, the modem can be disconnected, the terminal mode exited, and the outputs redirected to the printer.

Zip-Comm also provides an audible signal when receiving data from the modem. While memory is only partially full, the Apple speaker clicks and



sounds much like a teletype or a conventional typewriter. When available memory decreases to around 1,000 bytes, the sound becomes a shrill buzz, sort of like a divebombing mosquito. The change alerts a user to interrupt data reception, store memory contents to disk, clear memory, and resume reception. There's little danger of over-running memory because the distinctive warning signal continues every line until memory is saved and cleared. There's no apparent way to switch these sounds off, except to unplug the speaker completely.

In transmitting files, there are several options including a finished and formatted copy, a partially formatted "draft" copy, or a "raw" copy having all embedded commands in place for use by other Zardax systems. It's possible to transmit all or part of a file as necessary. All this without having to preformat and store a separate ASCII text file.

Compare that with a common multiple-program procedure. Often, the text is prepared on a word processor, edited, formatted, and output to disk exactly as it will be transmitted. The word processor then is exited, and a communications package is loaded for networking. Often the text must be loaded into a buffer for transmission once the connection has been established. If files are to be received, they must be captured by the communications software and stored to disk for later editing by the separate word processor. Obviously, the combined approach has some distinct advantages in convenience when sending and receiving pages of formatted text, especially long items like articles and reports.

Still, *Zip-Comm* does have a few disadvantages, and some trade-offs are necessary. The combined approach does not offer all the frills — the "bells and whistles" — of some dedicated communications programs. One notable difference is that *Zip-Comm* offers no automatic dialing function or dialing from a pre-stored list of telephone numbers. It is possible to set up some log-on text files and even individual files with the dialing commands and numbers for specific modems, but that's still not quite the same as just telling a program to dial or redial one number from a list of several.

A modem control file to direct the Smartmodem 300, dial the CompuServe Information Service, and log on with ID number and password was tried. The dialing portion worked. The log-on portion worked. The combination did not work. It seems there's a variable delay after connecting and before the next character, usually a CTRL-C, activates the network. Sometimes, several CTRL-C transmissions are necessary. There was no effective way to provide the delay and possible multiple commands within a single text file.

There is no error checking during a transmission. *Zip-Comm* does not have Cyclic Redundancy Check Character (CRCC) generation or any other means of automatically verifying that the receiving network echoes back what was sent. There's also no provision for sending or receiving binary files. Remember, however, that this program is intended for ASCII text files generated for or by a word processor. Routines are included in the manual for changing BASIC programs to text files for transmission, and received files can be "EXEC'd" into the Apple easily.

With the Smarterm and Videoterm 80-column boards, screen updating seemed slow, and there was a visually disturbing "ripple" effect for each new line scrolled onto the screen. *Zip-Comm* leaves a status line at the bottom, and it turns out that neither the Smarterm nor the Videoterm "window" the screen for high-speed updates and scrolling. Therefore, each line added rewrites the entire screen, causing the visible ripple. It does not, however, slow communications with the network. This shouldn't be any problem during normal file transfers where the screen isn't being watched and read continuously but it can be disturbing during on-line conferences or whenever one's attention is riveted on the screen. The supplier states that some 80-column boards like those from Vista Inc. do not exhibit this effect and scroll cleanly and smoothly.

A point of interest for owners of the Apple IIe is that *Zip-Comm* is supposed to operate at 1200 baud with that computer's 80-column card. The claim wasn't tested, but Action-Research Northwest states that they have tested it and that it does indeed work.

There are two other features of *Zip-Comm* worth mentioning, though they have nothing to do with networking functions. First, *Zip-Comm* adds a "yank-back" buffer for text deletions, changing the functions of the delete keys during editing. Before, deleted text was gone forever. Now, deletions are stored temporarily and can be retrieved from the buffer to recover accidental erasures or to move characters from one place to another. Characters also can be loaded into the buffer without being deleted from text, simplifying copying of short entries. There's a new option that allows marked sections of text to be stored in the glossary and moved or copied to other locations — something much faster than the previous technique of saving them as disk files and reinserting those files where needed.

It is not possible, however, to have these new buffer and glossary options without the full *Zip-Comm* installation in effect. They are not available to Zardax users wanting to have the Enhancer II operational since its functions must be disabled to set up *Zip-Comm*.

Admittedly, the combination of Zardax and *Zip-Comm* has shortcomings and probably can't replace a separate communications package for users involved in program transmissions, conferences, and similar network applications. Yet for those who transmit and receive considerable volumes of text material, it can reduce the time needed to handle text while adding convenience to the whole transmission and editing process.

Priced at $80, *Zip-Comm* is a useful enhancement to an already capable word processor. Together, they form an attractive, integrated software system that eases the network user's burden and can reduce connect time and charges through greater efficiency.

Additional information on both software packages is available from:

Action-Research Northwest
11442 Marine View Drive, S.W.
Seattle, WA 98146
(206) 241-1645

CLEAN SLATE WORD PROCESSING SYSTEM

Advanced Operating Systems
$79.95

Reviewed by Stewart Schneider and Charles Bowen

A very good case indeed can be made that the world does not need another word processor, but it is unavoidable. So long as there remain two people with computers seeking to put words to paper, there is a market for at least one more.

The selection of an appropriate word processor is so personal. A perfectly adequate word processor for the writing of a novel might not be at all satisfactory for producing lots of short documents.

Any new entry must provide something very special to win a place in this crowded field. And it must provide established functions that users have come to demand, and do it at an attractive price.

Clean Slate is attractively priced at $79.95, and uncommonly well documented, but falls short in the features department. And the lack of generally accepted features is all the more puzzling in a package as attractively packaged as *Clean Slate*.

"IF I HAD IT TO DO OVER, I'D NEVER HAVE DISCOURAGED HIS PLAYING GOLF!"

Clean Slate comes in an easel-backed three ring binder that stands on its own. The printing is beautiful, with green emphasis on keywords and heavy paper. The documentation is complete with page after page of "what you should do when somebody kicks the power cord out on you" and "how to recover from a bad disk," and even includes (we kid you not) the documented source code and technical notes.

Such documentation! If the program worked as well as the documentation looks, this would be a real winner.

Getting *Clean Slate* up and running is no small undertaking. It must be customized for the user's system, and that's not a process to be undertaken lightly. It took us a full hour, and we already know what a "printer mask" is. An unsophisticated user is certain to be totally baffled.

Using *Clean Slate* (at least on our 48K two-drive Model III) is well-neigh impossible. There is no access to the disk directory from inside the program. Forget merging many documents into one unless you have your directory printed on paper beside you. There is no command to move directly to the beginning or the end of the line. If you type with 80 character lines for printing, you must scroll the screen to see the remainder of the line, then scroll the entire length of the line back to see the beginning of the next.

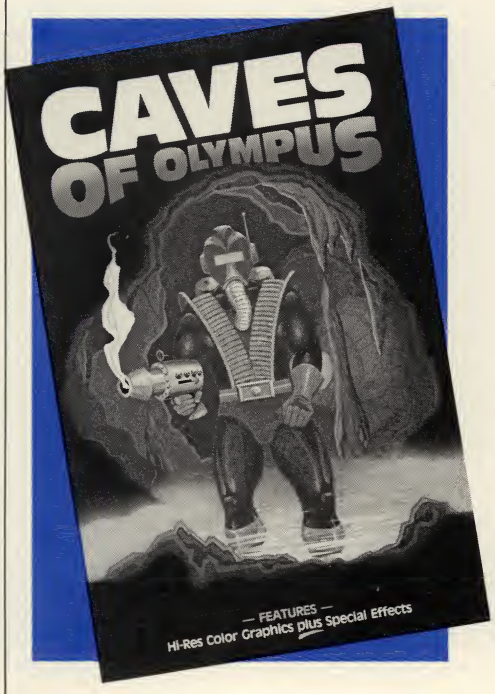
The documentation indicates that the user should type with 64 character lines, then use CLEAR-Q to quick format the document into 80 character lines. We pity the writer who must spend the time to format each line in a book. And, when we tried this trick, *Clean Slate* also removed all our paragraph markers and indents, requiring us to go back and re-insert all of them again. Top it all off with a very limited insert key which will only insert one space at a time, and it's time to go back to the drawing board, boys.

Clean Slate does provide a terminal mode so that it can be used to communicate with another computer, but the serious drawbacks in editing make it too difficult to use.

With as much attention to the programming as went into the documentation, *Clean Slate* could be quite nice indeed. As it stands, it cannot be considered a serious contender.

THE CAVES OF OLYMPUS

Reviewed by Ernest E. Mau



You, Anson Argyris, are the last fighting unit of the Olympian resistance, fighting for your life against deadly Laren invaders. Alone now except for the shattered remains of the battle robot you've destroyed, it seems a good time to unmask. As you slip out of the disguise, you resume your normal appearance as a 50-centimeter egg-shaped robot — a Vario 500. Dodging through the next door, you realize too late that it's a trap. No time for regrets, though! Not even time for a last thought! The exhaust blast from the rocket engines instantly vaporizes you and everything else in the chamber.

Luckily, it's only a game, so you can return until you finally find your way through the caves. Having done it once, you can try different routes, always seeking to improve your efficiency by finding a faster and more cunning path through the twisting corridors and booby-trapped rooms.

The game is *The Caves of Olympus*, an intriguing sci-fi adventure written by Thomas and Patrick Noone. It puts you in a fictional world where your

perceptive and deductive abilities are tested thoroughly. If you're a fan of science fiction, it's delightful.

The program takes a somewhat unusual approach, combining the best attributes of text-style adventure games with glorious high-resolution color graphics. It includes many special sight and sound effects that are pleasantly surprising each time they are encountered. There even are instances of animation. For example, activating a "transmitter" that moves your character from one place to another brings on a clever series of screen changes as the transmission field builds, followed by rapidly alternating screens as the transportation takes place. Throughout, the actions are accompanied by sound effects that add to the realism of the moment.

In other cases, using your "blaster" brings about an animated aiming and firing sequence, just as though you were lining up the sights of a real weapon.

Every location in the game is represented by both a text screen and a graphics screen. For those who prefer text games, *The Caves of Olympus* can be played that way almost exclusively. If the preference is for graphics, it can be played that way. The changeover from text to graphics or vice versa just takes a quick press of the return key.

One notable difference between this game and other graphic adventures is in the amount of information available. Others often squeeze descriptions into a few lines below the pictures, using switchover to text primarily to check the record of past actions or responses. Here, a full text screen is available to examine written descriptions of locations and objects, identify objects found or encountered, and monitor available exits. Thus, more current information is available, but at the expense of not having any on-screen record of past moves.

Throughout, *The Caves of Olympus* has quality graphics, skillfully crafted to make full use of an Apple II color screen. The use of pictures embedded within pictures and independently controlled provides realistic views of the world as you would see it if you really stood there.

Playability is above average, and the game offers a good challenge. However, as usual for games of this type, the most difficult task is to find out what commands work where.

Yet, there are three obvious shortcomings. First, the response time is slow. After a command is issued, it takes many seconds for the game to acknowledge, reject, or act on the command. That slows the pace and can be disturbing when trying to progress quickly through an already familiar area.

Second, nothing seems random. The same objects and the same enemies are in the same places each time through. That makes the game predictable, and it eventually can become boring. But then few games aren't boring after being beaten once.

Third, the game may be saved, but only to the master diskette. That means the disk drives must record data on the original diskette, thereby jeopardizing that diskette each time. It's always preferable to be able to save a game on a separate diskette and lower the risk of destroying the original.

Despite these minor flaws, *The Caves of Olympus* is thoroughly enjoyable and well worth the $39.95 price. It's available only for Apple II or Apple II Plus computers using DOS 3.3 and having at least 48K of memory. Applesoft must be in ROM or stored in the language card.

The Caves of Olympus is available at computer stores or directly from Howard W. Sams & Co. Inc., 4300 West 62nd Street, Indianapolis, IN 46268. The toll-free order line is 1-800-428-3696.

"OH,NO! HERE COMES ANOTHER BUNCH OF TOURISTS ....AND JUST WHEN THE COMPUTER IS DOWN TOO!!!"

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NEW!! POINTER VARIABLES!

212A/D DIRECT-CONNECT MODEM

Universal Data Systems
$486.50

Reviewed by Ernest E. Mau

With increasing numbers of people discovering the joys of connecting personal and small-business computers to networks, the need for faster and more efficient data transmission is growing. As a result, many of the companies who manufacture the modems (modulator/demodulator units) to connect or interface computers to telephone lines are introducing "high-speed" 1200-baud devices.

One such unit is the 212A/D Direct-Connect Modem offered by Universal Data Systems (UDS). This is an "external" modem, housed in its own enclosure and connected to the computer through an RS-232C serial interface. It's compatible with Western Electric 103- and 113-series modems at data transmission rates up to 300 baud, and with 212A systems at a full 1200 baud.

The UDS modem is designed for versatility. It can be used to place calls or receive them, allowing both manually controlled and fully automatic answering of incoming calls. It can connect to private lines such as those available in homes for personal computers or to leased lines and direct dialing networks typically found in business environments. It can operate with ordinary residential telephones or with special "exclusion key" telephones that allow a call to be answered by a phone at one location and transferred to the modem located somewhere else. Like most modems equipped with a dialing function, it can place calls using either dial-pulse (rotary) or Dual Tone Multi-Frequency (DTMF) pushbutton dialing.

The Automatic Call Unit (ACU) in the 212A/D stores up to five telephone numbers and has the ability to dial or re-dial them individually, or to continue dialing a designated number until connection is made. The numbers are stored in a battery-powered "memory" where they remain intact even when the unit is shut off or disconnected from a wall receptacle. Of course, there are manual dialing facilities as well, emulating a simple 212-series modem, so the user isn't limited to the five stored numbers.

The ACU also includes provisions for setting or resetting numerous options such as dial-tone or "blind" (non-dial-tone) dialing, rotary pulse or pushbutton tone dialing, timing intervals of detection of an answering carrier signal, and others.

Once operational, the UDS 212A/D performs admirably. Under test, it was used with 300 and 1200 baud systems, both of which worked well. The unit is self-adjusting, detecting the transmission rate needed and setting its own speed automatically to match that needed when a connection is first made. However, it cannot change speed "on the fly," so switching from a network using one speed to a network using another speed requires that the modem be manually reset to avoid garbled data.

Setting up the UDS212A/D the first time for a private-line installation was a bit of a problem. The RS-232C interface was less of a problem than expected, functioning well with or without handshaking signals, contrary to what was expected from reading the manual. The instructions for internal switch settings aren't as complete as they might be, failing to describe various interactions that may occur between internal switches. Following the recommended settings, the unit was tried first in a "forced originate" mode, but failed to perform as it should have. To make it work, one almost needed an extra set of arms to press front panel buttons and lift or replace the telephone receiver as ACU dialing operations progressed. Even then, the unit sometimes dialed the call, connected, and then locked into the ACU functions so data transmission was blocked.

I placed a call to the manufacturer's technical service department. After much discussion, they recommended that the internal switch be reset to the "forced answer" mode for the two-wire private-line telephone system being used. It worked! Suddenly, the modem and the ACU performed as specified. It even was possible to disconnect the phone from the modem jack and tie it to the telephone lines via a "Y" connector. For most communications, it wasn't necessary to use the front-panel switches at all.

One disadvantage to the "forced answer" mode, however, is that whenever the modem is powered, it tries to answer the phone. In the test system, it was not intended for the modem to be an answering device, but it has been forced to act as such. A few times, on answering the phone by lifting the receiver while forgetting to deactivate the modem with its TALK switch, both a caller and I have been surprised by a burst of carrier signal. That could be annoying, but there seems to be no alternative to the "forced answer" mode in a setup wired and functioning the way the test system does.

As I indicated, the unit does function well, and it's been tried with several computer systems and a variety of computer software ranging from public-domain programs to major commercial packages. If the computer software allows direct entry to the "terminal" mode and the output of the

characters necessary to activate the ACU functions, everything works fine. If the software requires its own dialing routines and has no provision to bypass them, it may fail. That's not a fault of the modem, but of the controlling system and software.

On the other hand, the instruction manual leaves something to be desired. It contains plenty of information, but much of it may be too technical for the average user. It almost takes an experienced technician to wade through the directions, so most users can expect to spend considerable time experimenting and playing with connections and switch settings.

The construction of the modem is adequate, but it could have been better. It's necessary to open the case to reset switches. That's easy enough, but the front panel is an interlocked plastic piece easily dislodged from the two internal circuit boards. It came loose twice while testing the unit, requiring considerable effort to reassemble.

Furthermore, the battery for the ACU is located on the bottom circuit board, out of reach for easy replacement. The manual specifies a replacement 3-volt battery that may be needed periodically, but there are no instructions on how to change it — not even an indication of where it is in the unit. The only way I've found is complete disassembly of the modem, which is risky at best and also runs into the problems of reassembling various interlocking pieces at the right time and in the right order.

In summary, you might expect a few problems getting the unit interfaced to a computer's serial port, connecting to the telephone lines, establishing the needed operational parameters, and maintaining the battery. The first three problems are typical of most modems anyway, so they don't really detract from the quality of the unit. That leaves the inconvenience of the battery replacement as the only potentially serious drawback. Aside from that, the UDS 212A/D can be expected to give solid, reliable service.

The 212A/D Direct Connect Modem with an Automatic Call Unit currently retails for $556.50. The 212A without the Automatic Call Unit retails for $486.50. Additional information can be obtained from Universal Data Systems, 5000 Bradford Drive, Huntsville, AL 35805, (205) 837-8100.

MC-10 MICRO COLOR COMPUTER

Reviewed by Fred Blechman

The other day a member of a local TRS-80 Users Group mentioned that he just saw Radio Shack's new Micro Color Computer at the Computer Center. More out of curiousity than interest, I went to see it — and walked out as a proud owner. I found the size, capabilities and price (only $119.95) irresistible.

I have enough experience with microcomputers to be selective: I have had a TRS-80 16K Model I for five and a half years, a Model III for two years (48K and two disk drives), a Sinclair ZX81 for over a year, and several months ago I purchased a Sinclair Spectrum color computer. So I'm not a newcomer in evaluating the capabilities of low-cost micros, and I approached the new Micro Color MC-10 with some skepticism.

The MC-10 looks good: It is small and solid (roughly 8½-inches wide, 7-inches deep, 2-inches high and under two pounds) and the keyboard markings are sharp and clear with a wide spacebar at the bottom. In use, the moving keys have a great feel with tactile feedback — the kind of click you can feel when the key makes contact. The layout of the keys and the "keyword" legends are intriguing.

Looking over the manual

Still, before parting with over a hundred dollars, I first asked to see the "Operations and Language Reference Manual." It was obviously designed for a beginner, with the first 26 pages devoted to an overview of the MC-10: Connecting it to your color (or black and white) television, using the keyboard, and connecting it to a recorder and printer.

The bulk of the manual, over 80 pages, covers Micro Color BASIC. I was impressed with the number of relatively sophisticated BASIC commands in the MC-10. The weakest area is graphics (more on that later). The rest of the manual, almost 30 pages, includes sample programs, error messages, codes and tables, trouble-shooting and maintenance. Several short programs are included to adjust the color, center the video, and demonstrate the sound.

My interest had become conviction, so I wrote out a check.

Trying it out

When I got the MC-10 home, I hooked it up to the antenna terminals of a color television using the switchbox, cable and power supply that comes with the MC-10. I had also purchased a cassette recorder cable (Cat No. 26-1207, $5.95) and used that to connect an inexpensive cassette recorder to the MC-10. I set the television and the MC-10 channel switch to Channel 3, and up came the display — a large green square with a black border, and MICROCOLOR BASIC 1.0 COPYRIGHT 1982 MICROSOFT in black letters in the upper left corner. The display was clear, sharp and stable, with a maximum of 32 characters per line and 16 lines.

I followed the manual through several exercises and continued to be impressed with the MC-10. It was much faster than my TRS-80 Model I or Model III in producing screen listings or computations, and the keyboard was a real joy compared to the ZX81 or the Spectrum.

The BASIC language used in the MC-10 is much like the Model I/III BASIC. Many of the commands used are fairly sophisticated, with some string handling, multi-dimensional arrays, READ-DATA-RESTORE, PEEK and POKE and math and trigonometry functions I had come to expect only with "expanded" BASICS.

It was also a pleasure to find that most of the 38 keywords could be entered by just pressing the Control key and the key below the desired word. A few keywords do not appear on the keyboard and need to be entered as individual characters (like DATA or TO). Any of the keywords can also be entered as individual characters, unlike Timex and Sinclair computers that require single-key entry. With the MC-10, if you're impatient and can't locate the keyword quickly, you just type it in.

Color, graphics and sound

The MC-10 color is limited compared to the Sinclair Spectrum. (The MC-10 can, of course, be used on a black and white television, but some of the colors are indistinguishable from others.) Although you can't change the black border, the color of the large display area can be

changed to black, yellow, blue, red, buff, cyan, magenta or orange with a simple CLS command followed by 0 to 8. However, as you type or list, the background goes back to green a character or line at a time.

The graphics are very limited, with only 16 graphic characters. Each character space is divided into four blocks so the graphic resolution is only 64 horizontal by 32 vertical. Each graphic location is controlled by either a CHR$ number, or a shifted keyboard character and the SET or RESET commands. However, take heart; SET allows you to specify the color of the lighted portion — although there can only be one color (or one color and black) in any full character space. Also, I found a much fuller discussion of this Semigraphic-4 Mode in *Color Computer Graphics*, by William Barden Jr. (Radio Shack Cat. No. 62-2076, $5.95). Although this book was written for the Color Computer (hereinafter referred to as "CoCo"), the discussion of this graphic mode applies to the MC-10.

The MC-10 has sound, loud and clear through the television. The manual glosses over this capability, only mentioning that you can get 255 tones each with a duration of from .075 to 19 seconds. They do not relate the tones to the musical scale. Here again I turned to a Radio Shack publication for more information — *Getting Started with Color BASIC* (Cat. No. 26-3191, $5.95). This over-300 page book has a considerable amount of information on CoCo sound, and it appears to be identical for the MC-10. Using this information, I was able to program simple tunes on the MC-10 and use the MC-10 keyboard to play music, although it is not what one would call a music synthesizer.

Peripherals

I used an inexpensive cassette record to CSAVE and CLOAD programs with the MC-10 with no problems at all. The cassette interface, like the CoCo and Model III, operates at 1500 baud — which is three times faster than the Model I. Unlike the Model I, III or CoCo, however, the MC-10 does not start and stop the recorder motor on saving and loading programs.

Amazingly, like the CoCo, the MC-10 has a built-in RS-232C communication interface to operate a printer, modem or other device that operates in accordance with this serial standard. It is configured for 600 baud, which is no problem for most serial printers. Radio Shack has announced (with no price or availability date as of this writing) a 32-column TP-10 Thermal Printer for use with the MC-10.

However, 600 baud won't operate with a standard 300 or 1200 baud modem, the device used to couple your computer or teriminal to the phone lines and other computers. The MC-10 manual does not indicate any method of changing this baud rate, but I suspect this can be software controlled with a POKE from the keyboard or within a program. When this information and a simple terminal program become available, the MC-10 will be perfect for use with CompuServe, bulletin boards and other videotext services.

The MC-10 comes with 4K of RAM on board, part of which is used for the video display, leaving a little over 3,100 bytes for program use. An add-on 16K RAM Module (Cat. No. 26-3013, $49.95) plugs onto a card-edge found under a removable plate at the back of the MC-10 and adds 16K of user memory.

Shortcomings

The MC-10 is not perfect. The only line editing provided is a delete-line or single backspace. If a program line is incorrect you'll only find out when you run the program, and then only a simple error statement. To correct a program line you must retype the entire line.

Although the manual is excellent as far as it goes, it has absolutely no information for PEEK and POKE use, there is no USR command for conveniently routing a BASIC program to a machine language subroutine, no memory map, no BASIC program like anatomy for programmers and very little information on sound. It does appear, though, that a lot of information for the CoCo does apply to the MC-10.

The MC-10 has a few shortcomings, but history has proven that the ingenuity of some brilliant programmers will overcome these.

Fred Blechman is a free-lance writer from Los Angeles.

VIC REVEALED

by Nick Hamphshire
Hayden Book Company
267 pp. $12.95

Reviewed by Don Lloyd

Some years ago a good friend (whom we'll call Frank), about to embark upon a month-long backpacking trip, asked me to babysit his microcomputer. At the time I was just becoming involved and I was very curious about this machine that had been consuming Frank for months. The printed documentation that came with the micro was written for a seven-year-old and contained very little information. However, Frank had been making notes — three loose leaf binders worth — full of all kinds of address lists, diagrams, BASIC and machine language subroutines, a partial disassembly of the monitor, and an incredibly tangled metaphor for how one was to put stuff on the screen to make pictures.

Reading *VIC Revealed* by English writer Nick Hampshire brought back vivid memories of that month of wonderment and confusion. It is not a book for a beginner unless you are decidedly self-reliant and prepared to do a

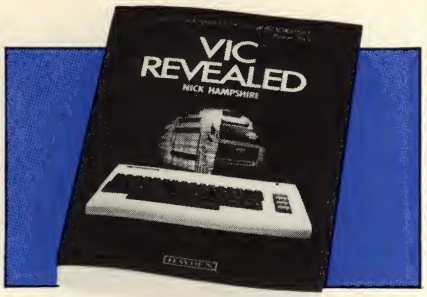
BEFORE YOU BUY A COMPUTER

By Dona Z. Meilach, B.S., M.A.,
Crown Publishers, One Park Avenue,
New York, NY 10016.
210 pages; $8.95 in paper, $15.95 in hardcover

Reviewed by Ernest E. Mau

When you're looking for a microcomputer, it's important to know something about the equipment. You should at least understand the bewildering array of terms and jargon used in the industry, if only to make sense of the sales pitches you'll be hearing. You also have to know how to ask questions — the right questions — so you'll be able to make educated choices and receive the most value for your money.

Ms. Meilach's book is a starting point, claiming to be a "practical guide to computer shopping." Its ten



great deal of cross checking. I wanted very much to like this book because it reminded me of Frank's enthusiam and fanatical attention to detail, but the sloppy and inconsistent presentation of material and the boatload of typographical errors eventually got to me. I felt as if Nick had just handed me his notes; the editor of this book must have been asleep.

To give you some concrete examples: the typeface selected for this book is one that uses a fat circle for an upper case 'O' and a skinny circle for a '0' (zero), and the two are simply not kept straight. I/O, which is supposed to stand for Input/Output, is often printed I/0 (Input/Zero). After informing us that hexadecimal numbers are preceeded by a dollar sign to distinguish them from decimal numbers, Mr. Hampshire (or his editor) proceeds to drop the dollar sign on a regular basis. In at least one place there is an English pound sign instead.

In the text you will come across OPCODE, OP CODE, Op code, and opcode. In the last two pages of the book, which I will charitably refer to as the index, you will find Op-Code.

Beginning on page 73 there is a list of subroutine addresses for the BASIC interpreter. The list is not identified or captioned and it splits a paragraph started on page 72, completed on page 79. The list itself has a column of hexadecimal addresses (no dollar sign) mysteriously labeled NAME. On page 74 there is a spurious hex address floating all alone in the white space above the list. Page 53 sports two of these unidentified flying hex numbers, with the dollar sign.

There are many other indications that the production of this book may have been less than professional. Some diagrams use mixed typestyles in misaligned labels. A spot check with my calculator turned up several errors which may have been either mathematical or typographical in origin.

Nick Hampshire's writing style does nothing to help matters. I have it on good authority that it is a common journalistic practice in England to link three or four complete sentences together with commas and to be lax with pronominal references. Theater and cinema critics use this style to denote informality and friendliness, as if speaking casually with peers. That's fine. Mannerisms are okay by me. But, by the fifth time the word 'this' appears in a run-on sentence that started with the word 'this,' I haven't the foggiest notion of the subject of that sentence.

The opening chapter on the 6502 CPU is useless to anyone who isn't already quite familiar with microprocessor architecture. Toward the top of page 3 we are informed that two bytes are required to establish a 16-bit memory address, and that the "bottom" eight bits are referred to as the high order byte. One paragraph later we are informed that a hexadecimal address is made up of four digits, the first two digits being the high order byte and the "bottom" two digits being the low order byte. It is exactly this sort of minor syntactical inconsistency which causes beginners and gullible, literal minded people such as myself to spend way too much time on, in this case, page 3.

If all of the above is not enough to cast grave doubt upon the reliability of the core material in *VIC Revealed*, consider the Introduction in which we are warned of a possible compounding factor: the English VIC 20 is a version 7, and in the United States we have version 6. From that point on you are on your own. *VIC Revealed* is not a book; it is a disheveled box of notes from a friend in England.

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chapters are packed with useful information, providing a guided tour through the complexities of the subject. The presentations are easily readable and well organized, though not necessarily as complete as might be desirable in a book of this type.

The book begins with a general introduction, guiding the reader through the concepts behind home and business computing. It then progresses through most of the individual system components and types of equipment in common use. Throughout, the reader is prompted to think carefully, as the author presents questions and issues "assignments" for individual research and study.

Therein is the key advantage to the book — the assignments. The reader is encouraged to analyze everything from his or her basic needs and uses through the availability of both hardware and software. The assignments prompt the questions that every buyer should be asking, questions to be directed not only to oneself but to the dealers and manufacturers as well.

The assignments also may be a bit of a disadvantage. While the questions are posed, the book doesn't offer many answers. Often, there is a lack of guidance on what a particular response might mean to system usability or practicality. For example, Ms. Meilach points out that cassette recorders have the disadvantage of being "sequential" devices that operate in a beginning-to-end sequence. Yet she fails to mention why that's a problem, so readers never having tried to use one may not realize the implications.

Other areas of possible concern are omitted. Notably, there's no discussion of power conditioning, which is a subject also sidestepped by dealers and manufacturers. Software subjects are skimmed lightly, and the author puts the emphasis on hardware. Many questions that might be raised here aren't mentioned, so the reader may be left feeling that the choice of machine can be independent of the choice of programs and software capabilities.

On the other hand, Chapters 9 and 10 should be treated as essential reading for all prospective buyers since they identify the obvious and hidden costs of computer ownership. In fact, Chapter 10 may be the most valuable part of the book, providing numerous charts that enable the reader to perform an extensive cost and equipment analysis.

While this book certainly isn't going to solve all problems a buyer faces, it's among the most complete and most understandable books of its type available thus far. For an individual who has no prior experience with computers, it does help one get started properly. For those who already have owned and used computers, it's an admirable review of the fundamentals and still contains much the reader may have forgotten or never known.

In spite of its shortcomings, *Before You Buy a Computer* is considered recommended reading.

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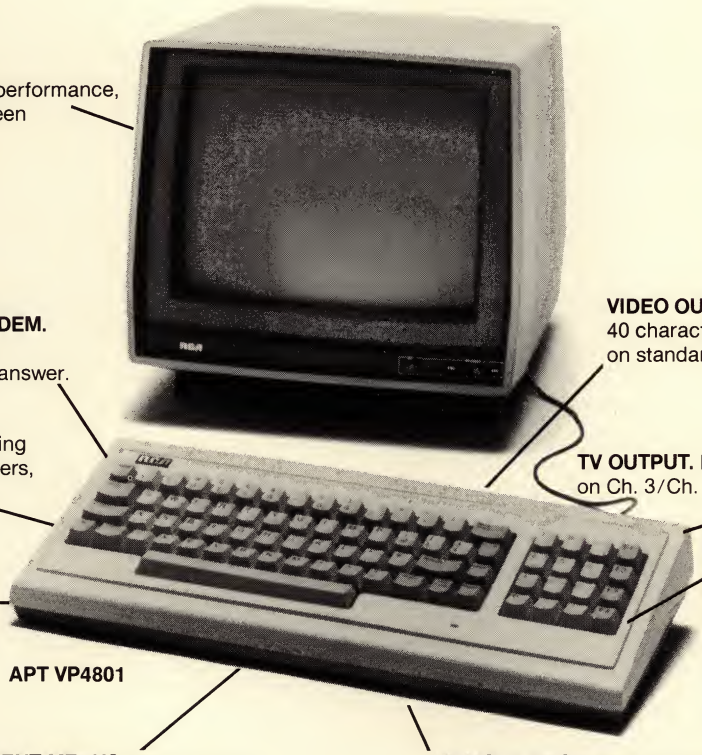

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The basic system is equipped with a Z80A processor, 68K of memory and two eight-inch, slim-line Tandon disk drives, providing a total of 2.4 megabytes of disk storage. It sells for $6,995. A dual processing system with 256K RAM retails for $7,995.

For information, contact Cromemco Inc., 280 Bernardo Ave., P.O. Box 7400, Mountain View, CA 94039. (415) 964-7400.

PIED PIPER

If you're in the market for a new personal computer, Microamerica Distributing wants you to follow the *Pied Piper.*

At a suggested retail price of $1,299, the *Pied Piper* has 64K RAM, 800K 5¼-inch slim line disk drive and a full array of compatible software application packages from Perfect Software.

For information, contact Microamerica Distributing, Corporate Headquarters, 21 Putnam St., Needham, MA 02194. (617) 449-5807.

FLIPTRACK IBM TUTORIAL

Learning to use a computer and appropriate software can be difficult, but FlipTrack Learning Systems can provide the answers to your difficult questions.

How to Operate the IBM Personal Computer is a course on three cassette tapes that provides step-by-step audio tutorial instruction. It is supplemented by a fully indexed operator's guide. In a matter of a few hours of instruction, a novice computer user will learn system set-up, master special keys and commands, run BASIC programs and understand IBM disk storage procedures. The FlipTrack course sells for $49.95.

How to Use VisiCalc starts with the basics, such as how to set up a spreadsheet with labels, values and formulas. It then proceeds to more advanced concepts, such as replicate, choose, lookup and net present value. The course is presented in a friendly, conversational manner on four spoken-voice cassettes, accompanied by a fully indexed lesson summary.

For information, contact FlipTrack Learning System, 526 N. Main St., Box 711, Glen Ellyn, IL 60137. (312) 790-1117.

CHROMASETTE MAGAZINE

Chromasette Magazine has produced a disk version of its popular ready-to-run programs for Radio Shack Color and TDP System 100 computers. Previously only available on tape, these monthly offerings include tutorials, utilities, practical programs and games. In addition, a written editorial describing the program and offering tips is provided.

A year's subscription is $95, a half year is $55 and a single disk is $11. For information, contact *Chromasette Magazine*, P.O. Box 1087, Santa Barbara, CA 93102. (805) 963-1066.

NEW FROM AMDEK

Amdek Corporation has introduced new peripherals for home computer users.

The Amdisk-I, a compact three-inch micro-floppydisk drive system with up to 286K of formatted storage capacity, is compatible with the Apple II personal computer. The single-sided double density drive is housed in a super-compact case and retails for $299.

Compatible with the Radio Shack Color Computer is the Amdisk II, a three-inch dual disk drive system that provides up to 624K of double-density formatted storage capacity. The unit provides faster access time than 5¼-inch drive, and utilizes a three-inch cartridge-type media that is constructed of hard plastic and includes an automatic shutter mechanism for protection, remaining closed until it is inserted into the drive. Suggested retail price for the Amdisk III is $599, and the media are $6.99.

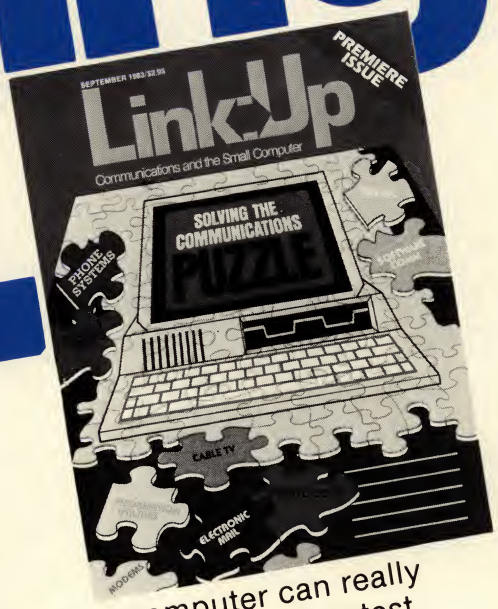
Thirteen software manufacturers have become supporters of this new three-inch micro-floppydisk cartridge system from Amdek.

Also new from the company is a business system package of peripheral equipment for the IBM PC, including a high-resolution color monitor, X-Y coordinate plotter, memory/graphics expansion interface board, plus Business Graphics™ software. Optional hardware includes an automatic six-pen plotter and the new Amdisk III.

The business system enables the IBM PC to produce extensive, professional-looking graphics and more than doubles the computer's memory capacity. Data can be documented in minutes with any combination of graphics, and the system interfaces with most popular software packages. In addition, it understands English, eliminating the need to learn a computer language.

For information on any of these products, contact Amdek Corporation, 2201 Lively Blvd., Elk Grove Village, IL 60007. (312) 364-1180.

Nothing Else.



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ALL-PURPOSE TERMINALS

A new series of professional quality All-Purpose Terminals (APT) for multi-database timesharing and dedicated, direct computer connected applications has been announced by RCA MicroComputer Products.

The APT incorporates such user-friendly features as menu controlled operation, programmable "personality" to match specific communication requirements for each database, a built-in, direct connect originate/answer/autoanswer 300 baud modem, tone or pulse autodialing of up to 26 stored numbers and automatic log on.

Four models are available. APTS without displays are $399 and with monitors are $598.

For information, contact RCA MicroComputer Products, New Holland Ave., Lancaster, PA 17604. (717) 397-7661.

TELERAY MODEL 16/7801

Teleray has introduced the Model 16/7801, which combines ANSI X3.64 compatibility and complete Honeywell 7801 software compatibility in a versatile, dual mode terminal.

In ANSI mode, the 16/7801 is a user-definable, four page editor. In 7801 mode, it contains all operating characteristics of the 7801. ANSI and 7801 modes are keyboard or remotely selectable. List price is $1,995.

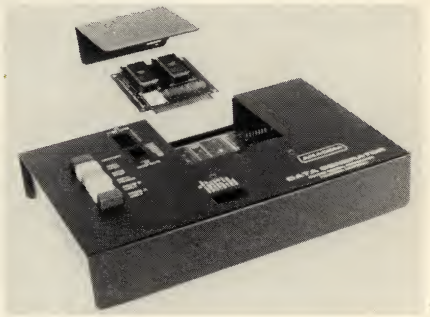
For information, contact Teleray, Minneapolis, MN. (612) 941-3300.

ANACOM DATA GENERATORS

Anacom General has introduced two data generators that economically test and demonstrate computer hardware without the aid of a host computer.

The DG2007 Data Generator provides a means of storing and transmitting up to 65,536 eight-bit characters. It is a portable, self-contained data source and may be used to test and demonstrate most computer printers, plotters and CRT terminals. It incorporates interchangeable message cards to house two EPROMs, giving the user demonstration and test flexibility and an alternative to other sources such as disks, cassettes and tape drives. The unit sells for $379.95.

The DG20009 Data Generator provides programmable data for testing and demonstrating CRT terminals. A variety of test programs may be generated by choosing between four message buttons, each of which contain up to 12 screen displays. Features include editing, full duplex and automatic stepping between screen displays. Up to 48K of memory may be stored in three EPROM sockets, which are housed on an interchangeable plug-in card. The unit retails for $389.95.



For information, contact Anacom General Corporation, 1116 E. Valencia Dr., Fullerton, CA 92631. (714) 992-0223.

LEGEND INDUSTRIES RAM CARDS

Legend Industries has developed several new RAM cards, which expand the capabilities of several kinds of personal computers.

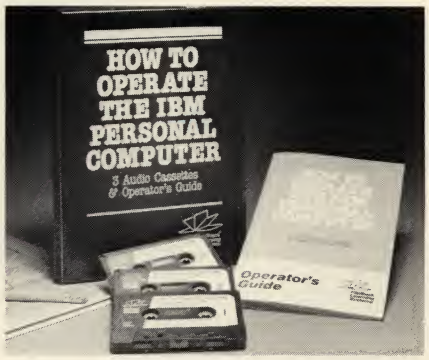
The S' Card allows you to upgrade from 64K to a full megabyte. Compatible with Apple computers, the S' Card can be installed into any slot and any multitude of cards can be used creating a total capacity of seven megabytes.

The TR-1M RAM card for the IBM PC will support up to 768K of directly addressable dynamic RAM memory. Chips can be added to the card to increase RAM content.

The Pascal Super Emulator is a software package used in conjunction with the Apple Pascal 1.1 Operating System and allows you to utilize multiple Legend RAM cards up to a maximum of four. That is, four 128K cards can yield up to 1,024 blocks of storage as one large drive.

For information, contact Legend Industries Ltd., 2220 Scott Lk. Rd., Pontiac, MI 48054. (313) 674-0953.

MAX



Max, The Production Manager, isn't a new employee in the office; rather, it's a new product for the IBM PC from Micro-MRP.

Max is a tool for planning and controlling inventory, production, and purchasing for small companies and divisions of larger companies. The software package includes a set of six integrated modules that provide bill of materials maintenance, inventory control, master scheduling, material requirements planning, shop floor control and purchasing control.

For information, contact Micro MRP Inc., Century Plaza 1, First floor, 1065 E. Hillsdale Blvd., Foster City, CA 94404. (415) 345-6000.

CEPT — "THE NEW SOLUTION"

The West Germans are calling it "The New Solution." What they are referring to isn't some neo-right wing revival, but to CEPT.

While Bildschirmtext has been delayed some six months in implementation due to installation problems on IBM's part, the Deutsche Bundespost (DBP) is more optimistic about its system than ever before. CEPT, as it will be implemented in West Germany, will initially be done at Level 3 — alpha-mosaic graphics with DRCS (Dynamically Redefinable Character Sets) capability in a portion of the screen. The graphics created in this mode are very close in form and look to Level 4 alpha-geometrics, but less expensive in terms of memory required for the user's decoder. It is precisely because of the difference in price of Level 3 and 4 decoders that the DBP has opted for initial implementation of CEPT at Level 3. In time, Level 4 will be offered — specifications for Level 4 implementation have been submitted by the CEPT study group to the CCITT, the world's international standards committee, for final approval. Specifications of Level 5 — alpha-photographic resolution — have also been written and submitted for final approval by the European standards committee. In short, the DBP has charted a direction for Europe to move in, no matter what individual countries choose to do.

So, what does it all mean? Very simply this: No European nation, no matter what their standard, is left out of this superstandard. While the DBP plan calls for implementation of videotex transmission in an eight-bit mode, this does not necessarily, in and of itself, obsolete those more than a million seven-bit Prestel and Antiope terminals already in place. Indeed, the Euclidian beauty of this system is that software can be written to accomodate seven-bit systems already in place. While future terminals are already being constructed in an eight-bit configuration, software will bridge the CEPT configuration with Prestel and Antiope hardware. As these terminals live their normal lifespan and are replaced, they will be replaced with the new configuration. And in the meantime, the user of Bildschirmtext will be able to gateway into Prestel, Viditel, Teletel, and all the other European services to retrieve seven-bit data on his eight-bit terminal. And likewise, the user of a seven-bit system will be able to gateway into Bildschirmtext to retrieve data or interact in the eight-bit environment. No one loses, and everyone stands to gain by upward evolution into the new format.

This New Solution will make its debut with the formal introduction of commercial Bildschirmtext service in September in Berlin. Dusseldorf, where the service had also been in a trial mode for the last few years, will also make the transition into a commercial mode at that time. But expansion to other cities originally scheduled then as well, has been delayed until May 1984 (due to IBM). According to DBP engineer Bodo Frahm, the DBP expects 100,000 to 150,000 users by the end of 1983, 300,000 to 500,000 by the end of 1984 and 800,000 to one million by the end of 1986.

As penetration increases, cost of terminals will go down, Frahm reasons. Right now, for example, a videotex terminal costs about 3,000 German marks, or 1,000 marks more than a regular television. With new semiconductors coming on the market and the newly developed CEPT Level 3 chipsets, the cost of a videotex terminal will drop by some 600 marks down to 2,400. Spurred by this price break, the DBP will be better able to market Bildschirmtext's electronic mail facility to businesses. As Frahm points out, "In Germany, videotex is acutally a less expensive medium than telex, teletex, or other data delivery systems."

This statement is enlightening and revealing in a couple of ways. In its obvious meaning, a real break-through has occured if videotex can prove to be more cost-efficient than accepted data delivery systems. In its less apparent meaning, however, it implies that this commercial service will also go after the business user. This would be a departure from all the public relations the DBP has generated thus far. When pressed for an interpretation, Frahm admitted: "We know that in the first step our customers will be business users. The second step will be to expand the service to private customers." Quite an admission on DBP's part, and shades of Prestel! In point of fact, a large number of businesses were involved in the trial phase of Bildschirmtext in Berlin and Dusseldorf. And of the 5,000 or so users still on line, the majority are business rather than and as opposed to residential users. And while it will, in the long run, become a national, commercial service for residential users, as projected penetration indicates, it will initially be driven by business users.

When it debuts in September, CEPT Bildschirmtext will be operating on the GEC mainframe already installed at Berlin. At the International Radio Fair held in Berlin in September, the New Solution will be introduced along with all the new hardware German industry has created to support it. And according to Wolfgang Heidrich, head of standards and operations at the DBP's Darmstadt research center, the first Level 4 terminal will be demonstrated. "While geometrics will be included as an option to terminals, it's not a must for every terminal," he says. Thus, a graphic sent in geometrics would appear as geometrics on the geometric terminal, but would only appear in mosaic form on those terminals already in place. This is another aspect of the Euclidian beauty of this standard: Level 4 graphics are interpreted according to the ability of the terminal.

Now you might say this is exactly what the British specified with Prestel, and you'd be right. The British call it graceful upward evolution and downward compatibility. But where the DBP goes a step further than British Telecom is in regard to that eighth bit. In the British mode, the eighth bit is for

COMING IN THE SEPTEMBER ISSUE OF TODAY

Profile of a Computerist
What makes a computerist tick? Some enthusiasts claim their computers have enriched their lives, unleashed their creativity and fattened their bank accounts. Others maintain that the technological tie that binds is actually more of a stranglehold. Meet five interesting Americans and read about the impact of computers on five very different lives.

Information Sickness: A Disease of the New Technology?
By the year 2000, two thirds of the population will earn a living by creating, managing and controlling information. What effect will this technological shift have on the mental health of Americans? How will we cope with the plethora of information generated by this new age?

Making Music on the Micro
Today, machine music is a child of the silicon chip. Instead of clumsy mechanical devices, electronically-generated waveforms produce sounds that can mimnic conventional instruments or create tones not possible for instruments made of wood, catgut or ivory. Find out a little bit of the history and things to come in the world of computer music.

CEPT
parity. The Germans work in error correction codes in other ways, and thus free up the eighth bit and make it available for an additional character. It is, in the final analysis, a more efficient use of available capacity of the transmission spectrum. Furthermore, as Heidrich points out, the eight-bit coding structure "is more efficient and better to handle, conforms to ISO recommendations, and is used for teletext as well." A number of terminal manufacturers have begun internal development and testing of the new eight-bit technology. Central to the terminal manufacturers is the chipset used for decoding the videotex data and graphics. The company key to development for a video display process for eight-bit CEPT is Valvo, which is developing the basic EUROM, a single, large VLSI chipset. Valvo actually designed the chip, and according to Heidrich, the West German company has worked hand-in-hand with Mullard on its actual development. Mullard has developed and engineered structure of the chip, and will then manufacture it.

To be continued next month.

R.C. Morse is owner of Internationally Syndicated Information Services in New York.

American Journalism
Continued from page 21
newspaper publisher Field Enterprises in the soon-to-debut Ceefax videotex service, is Centel, an independent telephone company. General Telephone and Electronics (gee, GTE) is working with the American Medical Association on a national medical videotex services. Videotex makes strange bedfellows, indeed.

Nagging doubts
If American newspapers don't fear old rivals in videotex, they still have other nagging doubts. One is the application of the First Amendment of the U.S. Constitution to the new medium. If videotex travels on the airwaves, does the Federal Communications Commission take charge? Or does print continue its protected status even though riding on charged electrons? Only time, and likely many courtroom battles, will bring the answer.

Meanwhile, interactive databases are very much in the future of American newspapers. A 1982 study for the Ohio Newspaper Association showed that a fourth of that "conservative, Midwestern" state's publishers were considering the new medium and that five systems already were in operation. One of these is no longer operating.

The *Columbus Dispatch* was a participant in the 11 newspaper/AP study, but then discontinued its videotex service. So did most of the other newspapers in the study, preferring to wait in the wings as the larger companies (Knight-Ridder, Times-Mirror, *Washington Post*, etc.) experienced the pains of pioneering. "But, sure, we consider videotex a potential rival, and a potential method of distribution," notes Editor Feck.

"The newspaper business is a mature one," explains *The Washington Post*'s Logan. "The core of the product hasn't changed for over 100 years." Managers of established industries tend to "stick their toes in," but do not move quickly beyond field trials. "The initial anxiety has abated somewhat; newspapers have discovered that videotex is not a short-term threat, so many are content to stick with their initial findings just now," he notes.

"The American newspaper business is planted in the industrial age," the *Dispatch*'s Feck agrees. "We are right in the middle of the changeover; from the industrial to the information age . . . We decided our time had not yet come for videotex. But when the time comes, if we're smart, you'll get the information from us.

"If not, shame on us."

Byron Scott is associate professor at the E.W. Scripps School of Journalism, Ohio University, Athens. He teaches a class in writing and editing for videotex.

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